

THE
ASSOCIATION OF SPECIAL LIBRARIES
AND INFORMATION BUREAUX.

REPORT OF PROCEEDINGS
of the SECOND CONFERENCE

held at

Balliol College, Oxford,
September 25th — 28th, 1925.

*To facilitate the co-ordination and systematic use of
sources of information in science, industry,
commerce, public affairs, &c.*

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ANNOUNCEMENT OF 1926 CONFERENCE.

The THIRD CONFERENCE on Special Libraries and Information Bureaux will be held at BALLIOL COLLEGE, OXFORD, during the week-end September 24th—27th, 1926.

Accommodation being limited, early application is desirable. The lists will be closed on (or if necessary before) September 1st, 1926.

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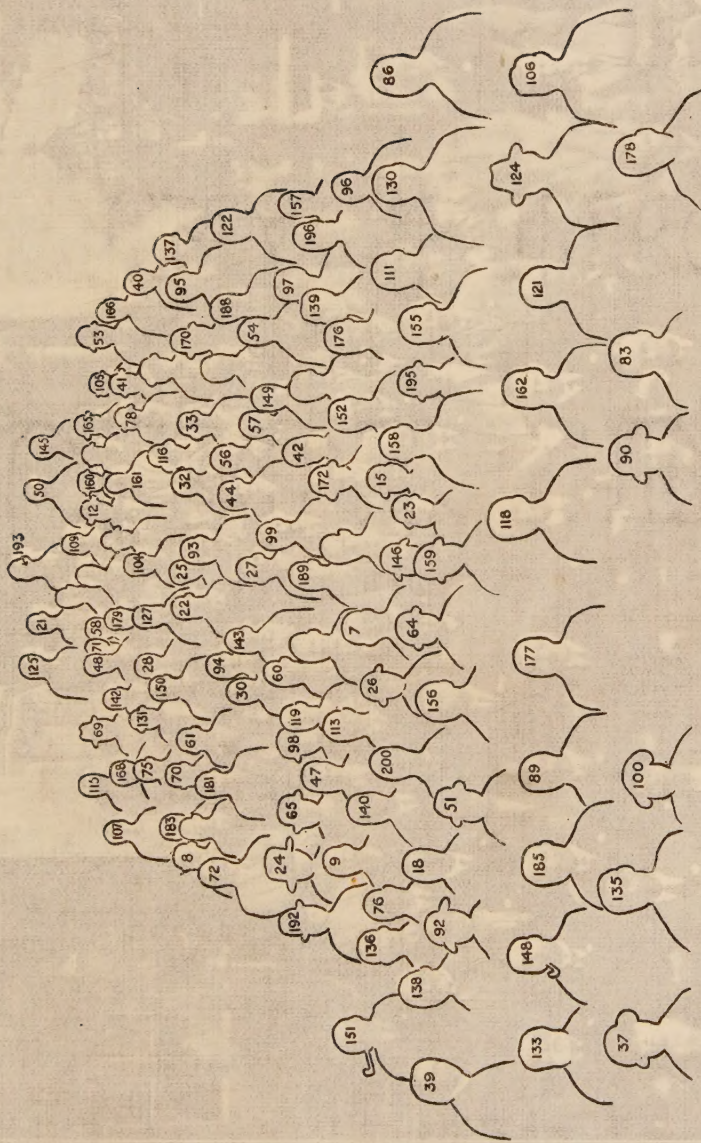
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UNIVERSITY LIBRARIES

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(Reference should be made to the correspondence numbers given in the list which follows of visitors to the Conference)



MEMBERS OF THE COMMITTEE
OF THE
ASSOCIATION OF SPECIAL LIBRARIES
AND INFORMATION BUREAUX.

*J. G. PEARCE, B.Sc., M.I.E.E. (<i>Chairman</i>)	Director, British Cast Iron Research Association.
*Brig.-Gen. MAGNUS MOWAT, C.B.E., M.Inst.C.E., M.I.Mech.E. - - -	Institution of Mechanical Engineers.
(<i>Hon. Treasurer</i>)	
*A. F. RIDLEY, F.L.A. -	Librarian, British Non-Ferrous Metals Research Association.
(<i>Hon. Secretary</i>)	
†F. W. CLIFFORD, F.L.A. -	Librarian, Chemical Society.
PERCY COHEN - - -	Unionist Central Office.
W. H. DAWSON - - -	Universities Bureau of the British Empire.
H. VINCENT GARRETT -	Rowntree and Co., Ltd.
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	Hon. Sec., Circle of Scientific, Technical and Trade Journalists.
Sir RICHARD GREGORY, D.Sc. - - - -	Editor of <i>Nature</i> .
L. HONEYBURN - - -	Nobel Industries, Ltd.
*R. S. HUTTON, D.Sc. -	Director, British Non-Ferrous Metals Research Association.
Col. E. L. JOHNSON - -	Director, Cleveland Scientific and Technical Institution.
Miss A. L. LAWRENCE, M.B.E., M.A., LL.B. -	British Medical Association.
†Lt.-Col. J. M. MITCHELL, O.B.E., M.C., M.A. -	Secretary, Carnegie United Kingdom Trust.
S. J. NIGHTINGALE - -	Research Dept. Metropolitan-Vickers Electrical Co., Ltd.
Major W. E. SIMNETT, M.B.E. - - - -	Associate, Institute of Civil Engineers.
†P. K. TURNER, A.M.I.E.E., M.I.R.E. - - - -	Research Dept., Burndep Wireless Ltd.
G. B. WILLEY, A.R.S.M., F.I.C. - - - -	Research Dept., Hadfields, Ltd.
*J. C. WITHERS, Ph.D. -	British Cotton Industry Research Association.
SINCLAIR WOOD - - -	Publicity Club of London, and Business Research Association of Great Britain.

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Telegrams: Asliburo, Westcent, London. Telephone: Museum 0749.

* Member of EXECUTIVE COMMITTEE.

† Co-opted since the holding of the Second Conference.

SECOND CONFERENCE OF THE ASSOCIATION OF SPECIAL LIBRARIES AND INFORMATION BUREAUX,

BALLIOL COLLEGE, OXFORD, 25TH-28TH SEPTEMBER, 1925.

LIST OF VISITORS TO THE CONFERENCE.

- | | | |
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| 1 | Alderman T. C. ABBOTT, J.P. | Manchester Public Libraries. |
| 2 | Mrs. R. J. ADAM | National Society for the Prevention of Cruelty to Children. |
| 3 | PERCY ALDEN, M.A. | British Institute of Social Service. |
| 4 | G. D. AMERY. | School of Rural Economy, Oxford. |
| 5 | Miss ALLEZ. | |
| 6 | Miss BAKER. | Agricultural Economics Research Institute, Oxford. |
| 7 | E. A. BAKER, M.A., D.Lit. | London University School of Librarianship. |
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| 9 | A. R. BARNES. | Messrs. George Philip & Sons. |
| 10 | ALFRED S. BARNES. | |
| 11 | HUGH E. C. BEAVER. | |
| 12 | Mrs. BINSTAD. | Society of Women Journalists. |
| 13 | LESLIE E. BIRD. | International Research Bureau, London. |
| 14 | Miss R. BISHOP. | |
| 15 | Mrs. M. K. BLAIR. | Messrs. W. S. Crawford, Ltd. |
| 16 | J. L. BLORE. | Oxfordshire Education Committee. |
| 17 | E. BOOTH. | Municipal Technical School, Birmingham. |
| 18 | S. C. BRADFORD, D.Sc. | Board of Education (including Science Library, South Kensington). |
| 19 | A. BRIDGES, B.A. | Agricultural Economics Research Institute, Oxford. |
| 20 | J. W. H. BROWN. | National Union of Teachers. |
| 21 | F. BULLOCK. | Royal College of Veterinary Surgeons War Memorial Library. |
| 22 | A. W. BURTON. | Department of Overseas Trade. |
| 23 | Miss D. CATLEY. | Witt Art Library, London. |
| 24 | Miss E. A. CHARLESWORTH. | |
| 25 | ERNEST P. CLARKE. | Dunlop Rubber Co., Birmingham. |
| 26 | Miss V. R. CLAYTON. | British Drama League. |
| 27 | F. W. CLIFFORD, F.L.A. | Chemical Society's Library. |
| 28 | PERCY COHEN. | Conservative and Unionist Central Office. |
| 29 | J. CORTESY. | (a) Institution of Electrical Engineers.
(b) <i>Science Abstracts</i> . |
| 30 | W. CROSBIE COLES. | Messrs. James Pascall, Ltd. |
| 31 | JOHN H. COSTAIN, M.A. | Registrar, University of Birmingham (University Research Committee.) |
| 32 | Major T. COULSON, O.B.E. | Special Libraries Association (of America). |
| 33 | Mrs. T. COULSON. | |
| 34 | Mrs. W. L. COURTNEY, O.B.E., J.P. | Carnegie United Kingdom Trust. |
| 35 | A. E. COWLEY, M.A., D.Litt. | Bodleian Library, Oxford. |
| 36 | Miss G. COWLIN. | College of Nursing Library. |
| 37 | Miss D. C. CROWHURST. | Rural Industries Bureau, London. |
| 38 | Miss J. D. DALGLISH. | |
| 39 | W. H. DAWSON. | Universities Bureau of the British Empire. |
| 40 | Capt. G. T. DEAN. | Building Research Board ; Dept. of Scientific and Industrial Research. |
| 41 | Miss L. B. DIBBEN. | Ministry of Labour. |
| 42 | Miss K. M. DOWDING. | Chiswick Polish Co., Ltd. |
| 43 | Mrs. DUGDALE. | League of Nations Union. |
| 44 | GEORGE S. DUNCAN, M.A., B.Sc., F.C.I.S. | Society of Glass Technology, Sheffield. |
| 45 | P. DUNSHEATH, O.B.E. | Messrs. W. T. Henley's Telegraph Works Co., Ltd., Gravesend. |
| 46 | Miss M. DURHAM. | The Woodhall-Duckham Companies. |

- 47 F. DONKER DUYVIS. (a) Nederlandsch Instituut voor Documentatie en Registratuur.
(b) Commission Internationale de la Classification Décimale.
- 48 M. D. FARROW. British Science Guild.
- 49 Miss E. FEGAN, M.A. Girton College Library, Cambridge.
- 50 E. A. FISHER. Research Association of British Flour Millers, St. Alban's.
- 51 Miss M. FLETCHER. Research Dept., Royal Arsenal, Woolwich.
- 52 Professor H. J. FLEURE. Geographical Association.
- 53 Mrs. FLOWER, O.B.E. *Christian Science Monitor*. (European Office.)
- 54 E. W. FRASER-SMITH, M.A. North East Coast Institution of Engineers and Shipbuilders, Newcastle-on-Tyne.
- 55 Mrs. E. W. FRASER-SMITH. Save the Children Fund.
- 56 EDWARD FULLER. The World's Children, Ltd.
- 57 Mrs. E. FULLER. (a) Circle of Scientific, Technical, and Trade Journalists.
(b) Illuminating Engineering Society.
(c) British Section International Association of Journalists.
(d) "Safety First" National Council.
- 59 G. M. GATHORNE-HARDY. British Institute of International Affairs.
- 60 L. D. GOLDSMITH, B.Sc., F.I.C. Research Laboratories of the General Electric Company, Ltd.
- 61 ALLAN GOMME. Patent Office Library.
- 62 THOMAS GORRIE. Chairman Library Committee, Carnegie United Kingdom Trust.
- 63 A. GOWIE. Drapers' Chamber of Trade of the United Kingdom.
- 64 Miss S. GREEN. Messrs. J. Lyons & Co., Ltd.
- 65 Miss M. GREENLAND. Lady Margaret Hall, Oxford.
- 66 Miss L. GRIER.
- 67 S. P. GRUNDY, O.B.E.
- 68 Miss G. HADOW. National Federation of Women's Institutes.
- 69 F. E. HAMER. Benn Brothers, Ltd. (Editor, *The Chemical Age*).
- 70 F. HANDY.
- 71 Miss E. HANHART.
- 72 G. T. HANKIN.
- 73 Miss ELLEN HART.
- 74 A. HAY. East Anglian Institute of Agriculture, Chelmsford.
- 75 B. M. HEADICAR. London School of Economics and Political Science.
- 76 A. L. HETHERINGTON, M.A. Department of Scientific and Industrial Research.
- 77 Mrs. F. HILEY. Barnett House, Oxford.
- 78 Miss W. HILL. Royal Colonial Institute Library.
- 79 F. HOARE. National Union of Teachers.
- 80 J. E. HODGSON. Royal Aeronautical Society.
- 81 A. MOORE HOGARTH, F.E.S. College of Pestology.
- 82 CECIL H. HOOPER. South Eastern Agricultural College, Wye.
- 83 S. E. HOOPER. British Institute of Philosophical Studies.
- 84 FRANK HOWES. Howard League for Penal Reform.
- 85 Miss D. W. HUGHES. (a) Messrs. Truman & Knightley.
(b) Career Advisory Bureau.
(c) *Journal of Careers*.
- 86 E. WYNDHAM HULME., B.A. Library Association.
- 87 A. L. HUMPHREYS.
- 88 Rev. F. E. HUTCHINSON. British Institute of Adult Education.
- 89 R. S. HUTTON, D.Sc. British Non-Ferrous Metals Research Association.
- 90 Mrs. R. S. HUTTON.
- 91 Mrs. INNES. Women's International League.
- 92 Miss E. M. IRBY. Union of Post Office Workers.
- 93 L. STANLEY JAST. (a) Library Association.
(b) Manchester Public Libraries.
(c) National Library for the Blind.

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|-----|--|---|
| 94 | H. J. JEFFERY, A.R.C.S.
F.L.S. | Imperial Institute. |
| 95 | Dr. A. JURGENS. | (a) Prussian State Library.
(b) Notgemeinschaft der Deutschen Wissenschaft. |
| 96 | GUY W. KEELING, B.A. | Association of Special Libraries and Information Bureaux. |
| 97 | Mrs. G. W. KEELING. | London Society for Women's Service. |
| 98 | Miss AGNES KELLEY. | Charity Organisation Society. |
| 99 | B. W. KISSAN. | National Institute for Research in Dairying, |
| 100 | Miss D. KNIGHT. | Reading. |
| 101 | E. C. KYTE. | Messrs. J. and E. Bumpus, Ltd. |
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(b) Theosophical Publishing House, Ltd.
(c) Noel Douglas. |
| 104 | F.B. LAWLEY. | Independent Labour Party Information Committee. |
| 105 | Miss A. L. LAWRENCE,
M.B.E., M.A., LL.B. | British Medical Association |
| 106 | H. I. LEWENZ, M.I.Mech.E.
M.I.E.E. | Editor, British Section Schloemann-Oldenbourg
Illustrated Technical Dictionaries. |
| 107 | H. I. M. LEWER. | Research Dept., Messrs. W. T. Henley's
Telegraph Works Co., Ltd. |
| 108 | L. B. LEWIS. | Institute of Marine Engineers. |
| 109 | G. C. LLOYD. | Iron and Steel Institute. |
| 110 | E. E. LOWE, Ph.D., B.Sc. | City of Leicester Public Libraries Museum and
Art Gallery. |
| 111 | M. A. MARSTON. | National Book Council. |
| 112 | THE MASTER OF BALLIOL. | Workers' Educational Association. |
| 113 | R. BORLASE MATTHEWS. | Consulting Electrical Engineer. |
| 114 | Mrs. MCKILLOP. | Sociological Society. |
| 115 | J. MENKEN. | Business Research Association. |
| 116 | Miss CONSTANCE MITCHELL. | Joint Research and Information Dept. of the
Trades Union Congress and Labour Party. |
| 117 | Lt.-Colonel J. M. MITCHELL.
O.B.E., M.C., M.A. | Carnegie United Kingdom Trust. |
| 118 | P. CHALMERS MITCHELL,
C.B.E., M.A., D.Sc.,
LL.D., F.R.S. | Zoological Society of London. |
| 119 | R. O. MORRIS. | Ministry of Health. |
| 120 | Miss MORRIS-SMITH. | Liberal Publication Department. |
| 121 | Brig.-General MAGNUS MOWAT,
C.B.E., M. Inst. C.E.,
M.I. Mech. E. | Institution of Mechanical Engineers. |
| 122 | Rev. W. A. MOWAT, M.A.,
B.D., C.F. | Church of Scotland. |
| 123 | A. J. MUNDELLA. | National Educational Association. |
| 124 | Professor GILBERT MURRAY,
M.A., D.Litt. | Committee on Intellectual Co-operation of the
League of Nations, Geneva. |
| 125 | F. K. NEATH, B.Sc. | British Cast Iron Research Association,
Birmingham. |
| 126 | R. H. NEW. | Clarendon Press, Oxford. |
| 127 | J. T. WALTON NEWBOLD,
M.A. | Labour Research Department. |
| 128 | L. NEWCOMBE. | University College Library, London. |
| 129 | Mrs. L. NEWCOMBE. | |
| 130 | CHARLES NOWELL. | Public Libraries, Coventry. |
| 131 | Miss R. E. QMASH. | Conservative and Unionist Central Office. |
| 132 | C. S. ORWIN, M.A. | Agricultural Economics Research Institute,
Oxford. |
| 133 | PAUL OTLET. | Institut International de Bibliographie,
Bruxelles. |

- 134 F. PACY. Library Association.
 135 J. H. PAFFORD. Rendel Harris Library, Birmingham.
 136 S. S. PICKLES, D.Sc. (a) Research Association of British Rubber and Tyre Manufacturers.
 (b) Messrs. Geo. Spencer Moulton & Co., Ltd., Bradford-on-Avon.
- 137 Miss G. PLENTY.
 138 Rt. Hon. Sir HORACE PLUNKETT, K.C.V.O., F.R.S., D.C.L., LL.D. Carnegie United Kingdom Trust.
- 139 Professor A. W. POLLARD, C.B., M.A., D.Litt. Central Library for Students, London.
 140 Professor A. F. C. POLLARD, A.R.C.S., F.I.P., A.M.I.E.E. Imperial College of Science and Technology.
- 141 H. T. POOLEY. (a) British Empire Sugar Research Association.
 (b) British Power Alcohol Association.
- 142 B. D. PORRITT, M.Sc., F.I.C., F.R.S.E. Research Association of British Rubber and Tyre Manufacturers.
 143 HAROLD E. POTTS, M.Sc. Chartered Patent Agent.
- 144 Mrs. H. E. POTTS.
 145 Rev. W. REASON. C.O.P.E.C. Research Bureau.
 146 Mrs. A. B. REED, B.Sc. Messrs. W. S. Crawford, Ltd.
- 147 CHARLES RETTIE.
 148 A. F. RIDLEY, F.I.L.A. British Non-Ferrous Metals Research Association, Birmingham.
- 149 Mrs. A. F. RIDLEY.
 150 ERNEST I. ROBSON, M.A. Institute of Agricultural Engineering, Oxford.
 151 H. ROGERS. India Rubber Manufacturers Association, Ltd.
 152 H. ROTTENBURG, M.A. Engineering Laboratory, Cambridge University.
 M.I.E.E.
- 153 H. S. ROWELL, O.B.E. Research Association of British Motor and Allied Manufacturers.
- 154 Sir MICHAEL E. SADLER, K.C.S.I., C.B., M.A.
 155 Professor F. E. SANDBACH, M.A., Ph.D. Association of University Teachers.
 156 C. R. SANDERSON. National Liberal Club.
 157 Miss SAVILL. Experimental Dept., Fine Cotton Spinners and Doublers Association, Macclesfield.
- 158 G. SHAW SCOTT, M.Sc. Institute of Metals.
 159 Mrs. SHAW SCOTT, B.Sc. Women's Engineering Society.
 160 Miss G. SEARIGHT. Librarian, League of Nations Union.
 161 Miss K. SECKER. Imperial Bureau of Mycology.
 162 Major W. E. SIMNETT, M.B.E., Assoc. Inst.C.E. Public Library, Oxford.
- 163 ERNEST E. SKUCE. *The Times*.
 164 H. A. SLACK. British Thomson-Houston Co., Ltd., Rugby.
 165 Miss E. SNOWDEN. Department of Scientific and Industrial Research.
 166 CECIL A. SPENCER. Faraday Society.
- 167 F. S. SPIERS, O.B.E. British Xylonite Co., Ltd., Manningtree.
 168 FOSTER SPROXTON.
 169 Rt. Hon. Sir ARTHUR STEEL-MAITLAND, Bart., M.P. Minister of Labour.
- 170 Miss P. STRACHEY. London Society for Women's Service.
 171 Sir JOHN STRUTHERS, K.C.B., LL.D. Vice-Chairman, Carnegie United Kingdom Trust.
- 172 Miss L. STUBBS, B.A. Metropolitan-Vickers Electrical Co., Ltd.
 173 R. THOMAS, D.Sc. Messrs. Lever Bros., Ltd.
 174 S. B. R. THOMPSON.
 175 Councillor ALEC TURNER. Coventry Public Libraries Committee.
 176 P. K. TURNER, A.M.I.E.E. M.I.R.E. (a) *Experimental Wireless*.
 (b) *Wireless Trader*.
 (c) *Wireless Export Trader*.
 (d) Periodical Trade Press and Weekly Newspaper Proprietors' Association, Ltd.

- 177 A. E. TWENTYMAN, B.A. Board of Education Library.
 178 STANLEY UNWIN. (a) National Book Council.
 (b) Messrs. George Allen & Unwin, Ltd.
 (c) The Swarthmore Press, Ltd.
- 179 H. A. WAITES, M.L.A.
 180 H. WARRILOW. Young Men's Christian Association.
 181 J. W. WHEELER-BENNETT. Association for International Understanding.
 182 MRS. J. WHITE, D.Sc. Auto-Education Institute.
 183 G. B. WILLEY, A.R.S.M., F.I.C. Messrs. Hadfields', Ltd., Sheffield.
- 184 T. O. WILLSON, C.B.E., M.A. Oxfordshire Education Committee.
 185 J. C. WITHERS, Ph.D. (a) British Cotton Industry Research Association, Manchester.
 (b) Textile Institute, Manchester.
 Business Research Association.
 Coventry Public Libraries Committee.
 Ministry of Health.
- 186 SINCLAIR WOOD.
 187 W. J. WORMELL, J.P.
 188 O. KENTISH WRIGHT, M.B.
 189 Captain R. WRIGHT, M.C., F.L.A. Middlesex County Libraries.
 190 NORMAN WYLD. Industrial Institute.
 191 Senator HAROLD BARBOUR, M.A. Horace Plunkett Foundation.
- 192 R. BAXENDALE. L.M.S. Railway, Euston.
 193 T. F. BURTON, B.Sc. Bureau of Chemical Abstracts.
 194 MRS. T. F. BURTON.
 195 Miss M. CLEEVE. British Institute of International Affairs.
 196 H. L. CONSTABLE. Incorporated Association of Assistant Masters in Secondary Schools.
- 197 C. W. DAWSON.
 198 MRS. DURRANT. Society of Women Journalists.
 199 Miss E. FLITTON.
 200 J. W. HEADLAM-MORLEY. British Institute of International Affairs.
 201 B. T. KING, C.Inst Mech E. Patent Attorney (G.B., U.S., and Can.).
 202 J. F. MARSHALL, M.A. British Mosquito Control Institute, Hayling Island.
Daily News.
The World To-Day.
- 203 E. CLEPHAN PALMER.
 204 J. PRITCHARD.
 205 MRS. J. PRITCHARD.
 206 H. QUIGLEY, M.A. British Electrical and Allied Manufacturers' Association.
 Faraday Society.
 Horace Plunkett Foundation.
- 207 H. R. RAIKES.
 208 K. WALTER.
 209 EUGENE HAVAS.
 210 Dr. J. D. THOMPSON. (a) (Formerly) Director Legislative Reference Service, U.S. Congress.
 (b) (Latterly) Director, Research Information Service, National Research Council, Washington.
- 211 H. J. SMALL.

NOTE: Numbers 3, 10, 45, 55, 59, 63, 68, 84, 87, 101, 123, 129, 141, 147, 153, 154, 164, 167, 171, 174, 180, 186, 190, 201, were, for various reasons, unable to be present.

PREFACE.

Since the Conference considerable progress has been made towards the establishment of the Association on a permanent basis, and a formal meeting of those interested in its work will shortly be held in London. Following negotiations with the Library Association, a constitution is being drafted for the Association of Special Libraries and Information Bureaux, provision being made for affiliation with that body.

The Committee has been strengthened by the co-opting of Lt.-Colonel J. M. Mitchell, O.B.E., M.C., M.A., Secretary of the Carnegie United Kingdom Trust; Mr. F. W. Clifford, F.L.A., Librarian of The Chemical Society; and Mr. P. K. Turner, A.M.I.E.E., M.I.R.E., of Burndebt Wireless Limited.

On October 20th, 1925, a deputation from A.S.L.I.B. gave evidence before the Departmental Committee of the Board of Education which is enquiring into the Public Library provision of the country.

The compilation of a comprehensive and authoritative Directory of the Special Libraries and sources of information throughout the British Isles is in progress; the Committee has been greatly assisted in this task by the generosity of the Carnegie United Kingdom Trustees, to whom the whole movement is very largely indebted. Those able and willing to further this piece of work are invited to communicate with the Organising Secretary at the address given below.

On behalf of the Committee,

J. G. PEARCE,

Chairman,

38, Bloomsbury Square, London, W.C.1.

*FIRST SESSION - - - Friday Evening,
September 25, 1925.*

ADDRESS by the Chairman:

The Right Hon. Sir ARTHUR STEEL-MAITLAND, Bart., M.P.,
Minister of Labour.

This is an absolutely unexpected rôle that I have been called upon to undertake—to take the chair at this dinner. I am quite sure that you, as well as I, lament the absence of the Master, who would have taken the chair had it not been for domestic reasons that made it impossible for him to be here. When I saw Mr. Orwin come into the Hall I knew that one of the other existing Fellows of the College ought to have filled my post, and he would have done it much more amply; but I could not prevail on him to do so at short notice. Still, if you will allow me as an old undergraduate and member of the College, in the absence of the Master, to extend a welcome to the Association of Special Libraries and Information Bureaux, I do so most sincerely. This Hall has seen many gatherings of people of many different intellectual pursuits, and I am quite sure to-night you are far from being the least welcome.

On receiving the invitation to speak here I had an extraordinary succession of feelings; the first was one of pleasure, and the second was one of complete horror. The feeling of pleasure was a perfectly natural one. Perhaps it is because I am a mongrel, half Scotch, half English, but the Scotch side of me demands that I should set a real value upon facts, and I always have thought that we do not pay attention enough to trying to get facts as the foundation of the statements we make; I very often get a real feeling of irritation that entirely destroys any tactfulness that I ought to possess—that is part of the stock-in-trade of a politician—when I hear some sloppy-minded enthusiasts producing one statement after another, knowing all the time that if they were called upon, in the first place they could not produce any facts or even any study of facts to back them up, and what is still worse, that they sometimes regard it as an insult that it should be thought that their sentiments are not based on any study to start with. That is why it was a pleasure to think that there was to be a gathering of this kind; I truly do not know which kind of people I hate most—those who want to leap before they look, or those who will neither look nor leap. They seem to me to be both of them equally abominable. The sloppy-minded class that move my indignation are very like what one used to find amongst a lot of undergraduates up here. I daresay a great many people here know Godley's imitation or parody of Omar Khayyam when he was writing of an examination called Moderations up here. He produced the verse:

"Steer clear of facts: the fool who deals in those
A mucker he inevitably goes.

The musty Don who looks your paper o'er,
He knows about it all—or thinks he knows!"

I only wish that sometimes in the walks of life hereafter there could be some process of examination in order to expose the amount of loose talk that goes about with hardly any foundation. That was one of the reasons for the pleasure that I felt in learning that there was to be a gathering of this sort; but, truth to tell, when I looked at the preliminary list of representatives, that feeling was succeeded by a feeling of almost unmixed horror. I hope no one will think that I am lacking in tact on this occasion. It was not the names of the representatives that filled me with horror, but the extraordinary diversity of the institutions that they represent. I thought of the extraordinary diversity, almost as a nightmare, of the multitudinous armies of facts that were represented in this room—this room which is consecrated to the study of people like Plato and like Aristotle, who lived in a much simpler life, where there was not such an enormous collection of facts, and where they were able to form their generalisations without the same difficulty. Let anyone read any section of any ten of these institutions in order, and they will find out the amazing variety of the facts represented here, which appeared to me, when I went to bed after a long day's work, almost as if they were an army of Robots in the intellectual world which was in danger of mastering the minds that really ought to rule them. But the truth is, I suppose, that it is your duty, and a great one, to help us to see the facts which are represented by all the different libraries and bureaux, to help us to try and see them so that we really do use them, to start with, and further that we do use them as servants and not as our masters—that is to say, that we do generalise, but that we do always go to and from, alternating from the generalisations back to the facts, back again to an ampler generalisation, so that we get in the end at the only way by which decent knowledge can be obtained.

What I have said in these very few minutes are, I am sure, platitudes to everybody. I remember that Professor Dicey up here once said to me that it took a Scotsman successfully to produce a platitude and pretend it was a discovery. I do not pretend for a moment,—I would not dare to pretend,—that these platitudes were discoveries, except that after all, very often you can look at it another way, and say that a platitude is, when all is said and done, a truth which most needs emphasis. If I may finish quite briefly with a triple-barrelled platitude, it is that I think this country needs more than any other country to have the type of ordered work which is represented by a proper use made of all the institutions that you represent. We need it, I think, more than other countries for a few perfectly clear and definite reasons. I have been struck, in a varied career, that from a material point of view we in this country are ages behind not only Germany, but America at the present moment, in our appreciation of scientific fact and of scientific research. I know of one or two laboratories in this

country which are of first-class character, for example, the General Electric laboratory in scientific work; but they are childish as compared with what is done in the United States in this way, and therefore it seems to me that in this country quite peculiarly we need to amend our ways if we are to retain our position from a material point of view. But I cannot help going into my own sphere of work and thinking that we really need it still more there. It is quite amazing—or rather, it is not amazing; it is natural, perhaps—that the more technical the subject is, the more quickly the blatant fool exposes himself if he talks about a matter with which he really is not acquainted. No one could talk to electrical engineers about ohms and volts and amperes without very soon being exposed in his folly if he had not got any knowledge on which to base his statement, and the same would be true of a man who talked to a doctor about microcytes and macrocytes, and the phenomena with which doctors are more or less familiar; but when it comes to really generalised subject-matter—and probably the most generalised subject-matter of all is politics—then any sort of fluent folly in the way of talk, if it is only produced with confidence enough, can hold its own very often for a long time before it is exposed. I remember the story which is told of the man who went down to a local bye-election meeting, and he had been talking for a quarter of an hour with great success before either he or his audience found that he had got into the wrong meeting by mistake. I can well imagine the type of stuff which he talked with comparative safety. It is true that the more general the subject-matter, the easier it is for folly to pass current, and therefore the greater the need for an appreciation of facts. We are in this country not taking the lead of our own choice, but by accident, as it were; we are in a peculiar transition stage when economic questions are right in the forefront and commanding a very general interest; though the interest is general, the power of criticism throughout the country at large is comparatively little developed. It is not the fault of the people who have not developed it, but the fact remains that while the interest is there the power of criticism is comparatively little developed. From that point of view it is more important probably for this country than for any other, being in that stage, that there should be a demand for the facts to a continually greater degree, and the need for an open-mindedness that admits the facts when they come, and does not say, like the Stoics of old if the facts do not fit the theory then so much the worse for the facts.

Then lastly, I would put in just one word for pure research without any particular utilitarian object in view. Having gone through a variegated education, I always put in a plea for pure research. Going back to what Aristotle said long ago, it does seem to me that provided life is sufficiently furnished with the things of material need, the ultimate value of it comes from the energy of the mind, the boundaries of which are extended so much by pure research.

(A vote of thanks to Sir Arthur Steel-Maitland for his address was carried with acclamation.)

THE PRESENT POSITION WITH REGARD TO THE ASSOCIATION OF SPECIAL LIBRARIES AND INFORMATION BUREAUX.

By R. S. HUTTON, D.Sc. (British Non-Ferrous Metals Research Association).

In view of the opportunity which is afforded on the programme for a report of the Standing Committee to be presented to you to-morrow night, it is only necessary to make a few introductory remarks, chiefly for the benefit of those who did not attend the first Conference.

The main objects of the Association are clearly set out in a small leaflet which is available and has been circulated to all visitors to this Conference; in one sentence these are summarised and are reproduced on the title page of this report.

The work of the Standing Committee in carrying out the resolutions of the last Conference has been greatly assisted by a grant and stimulating advice from the Carnegie United Kingdom Trust. With this help, our Organising Secretary, Mr. Guy Keeling, has been appointed, and I think most of you have already been in touch with him and will appreciate the active work he is carrying out for us. (Applause.)

The extraordinary diversity of interests attracted to the Conference is even more apparent this year than last, and one cannot help feeling impressed by the difference between this gathering and the last Conference. The numbers have risen from 85 to over 200, and the representation of national and international institutions is much stronger than before. Moreover, we have the presence of a Minister of the Crown; Professor Gilbert Murray will speak to us of the work of the Committee on Intellectual Co-operation of the League of Nations; and distinguished foreign representatives will tell us of work accomplished abroad with objects somewhat similar to our own.

The common links of interest which draw us together seem to be the collection and the distribution of fact information. The pursuit of these objects presents many problems of a general nature, however diverse is the specific subject dealt with, and two of these seem to be of outstanding importance:—

- (a) Securing reasonable completeness of information from world-wide resources.
- (b) Presenting information so gleaned in an assimilable form.

The first large task the Committee is proposing to undertake is a survey of the special library and information resources of this country, with the object of preparing an annotated Directory.

In this connection the Association should be in a position to serve as a sort of clearing house of sources of information, in other words, an information bureau of information bureaux.

Numerous subsidiary and supplementary objects should lend themselves admirably to co-operative consideration by such a body as our Conferences.

If we can revive the spirit which prevailed at our last Conference at Hoddesdon, we may confidently expect a most stimulating week-end, leading to closer co-operation of our supporters and the advancement of our common interests.

We are specially fortunate on this occasion in securing the hospitality of Balliol, and our surroundings are destined to play no small part in the success of our deliberations.

THE CO-OPERATIVE REFERENCE LIBRARY.

By the Rt. Hon. SIR HORACE PLUNKETT, K.C.V.O., F.R.S.,
D.C.L., LL.D.

The Co-operative Reference Library, which I am to describe and, if possible, to justify, is an Irish Institution created in 1914 to supply an Irish need. In the near future it is likely to be transferred from Dublin to London.

I regret that the narrative must be rather personal, because the need of the library first occurred to me, and the name I gave it was a crib from an American library with which I was familiar. If I was not its father I was at least its godfather. In the State of Wisconsin I had a friend, Doctor Charles McCarthy, whom the late Lord Bryce, in a letter he wrote me many years ago, called "a man of great force, large ideas and unwearied energy." He had played a most useful part in the public life of his State. His only official position was that of Librarian in an institution, largely fashioned by himself—the Legislative Reference Library. No less an authority on constitutional machinery than the late Sir Courtenay Ilbert, in an article upon "The Wisconsin Idea" in the *Contemporary Review* (February, 1914), gave it high praise. In an article entitled "McCarthy of Wisconsin," published in the *Nineteenth Century* of June, 1915, I described the working of this special Library and told how it led to the creation of the Library under discussion. I wrote:—

An institution in which can be studied the doings and strivings, the successes and the failures, the wisdom and folly of legislators and administrators throughout the world, is a great contribution to the education and ultimate steadying of feverish democracy. Some of us social and economic workers for Ireland have not failed to bestow upon this creation of McCarthy's brain the sincerest flattery. We have set up in Dublin a Co-operative Reference Library where the farmers of Ireland—and for that matter of Wisconsin as well—can learn the potentialities of organised self-help, just as the resources of governmental action may be studied in the institution I have described.

When I wrote the words "organised self-help," I must have had in mind the best definition of co-operation—"self-help made effective by organisation"—which had inspired the agricultural organisation movement in Ireland. The Home Rule Bill of 1912 had been, so to speak, interned in the statute book. The Easter rising of 1916, the partition settlement of 1921, and the civil war had still to signalise the statesmanship devoted to our affairs, and to upset all the calculations of the workers for agricultural development and rural reconstruction. The Agricultural Organisation Society, an agency of social service created as long ago as 1894 for the attainment of these ends, had reached a stage where its leaders not only applied co-operation to every branch of farming,

but had elaborated a clear-cut agricultural policy based upon the self-help they had successfully organised. This policy, the reason for mentioning which will presently appear, is gradually coming to be accepted as suitable not only to the conditions of Ireland but also to those of all countries dominated by the English economic idea, with its twin objectives of industrial development at home and commercial expansion abroad. But I must not digress. The point is that the Society needed in its work accurate knowledge upon the application of the co-operative principle to agriculture. This information had to be gleaned from Scandinavia and the other parts of Europe where the national importance of agriculture had not been lost sight of in the struggle for commercial supremacy, with the consequent urbanisation of all thought, throughout the English-speaking world.

Nor is it enough for the thinkers upon the rural problem of Ireland to be informed upon the principles and working details of *agricultural* co-operation. They are convinced that their problem will never be satisfactorily solved until co-operatively organised producers of food can sell to co-operatively organised consumers, without the intervention of a horde of unnecessary middlemen battenning upon both. Thus knowledge of *industrial* co-operation became essential. This necessitated a great extension of the Co-operative Reference Library's books, pamphlets and official reports. Furthermore, it was found that specialisation upon co-operation, both agricultural and industrial, must not exclude the provision for co-operative students of standard works upon general economics and sociology, however the supply of these may be restricted. If a serious contribution to knowledge of and thought upon the subject was to be made, the equipment of the Library had to be upon a liberal and comprehensive scale. Lastly, it was necessary to have a librarian with a considerable knowledge of languages and skill in accurate translation, in addition to the more obvious general qualifications. Unfortunately, as the Library grew in wisdom and in stature, its upkeep became expensive. It will, I hope, before long be widely known by its fruits and justify its costly existence.

During the first decade the Library was housed in the Plunkett House, Dublin, the home of the Agricultural Organisation Society. Its chief usefulness has been indirect, through the information and education given to the indoor and outdoor staff of that very active body. Of its *seen* work, probably three books on Co-operation written by the staff and published by the Co-operative Union at Manchester, "Rural Reconstruction in Ireland," by the first Librarian Mr. L. Smith Gordon and Mr. L. C. Staples a research student in the Library from Harvard, a translation by Miss Florence Marks, the present Librarian, of Professor Gide's "Consumers' Co-operative Societies," and translations of several reports on foreign co-operation, including a recent article on Bulgarian co-operation, stand out. A quarterly journal, "The Irish Economist," was published for some time, but had to be abandoned from lack of funds. The staff published a useful book on

"Co-operation for Farmers." Valuable reprints of articles in the Journal (such as "Industrial Alcohol," "Labour Conditions in Dublin," "The Organisation of Agricultural Labour"), added to a spate of pamphlets upon current problems, testify to the constant utilisation by the staff of the materials it had assembled. Students have resorted to the Library from Britain, Ireland, the Dominions, India, Egypt and the United States—not, however, in sufficient numbers to furnish a substantial revenue from the fees they could be charged. Mr. J. Johnston, Fellow of Trinity College, Dublin, did not exaggerate when he wrote that the Library "has gone far to make Ireland the university of the English-speaking world in co-operative matters." Professor Hall, the officer in charge of the educational department of the Co-operative Union, has written to the Librarian:—"We have had many visitors at our office in Manchester, and nearly always the Reference Library comes into the discussion as one of the institutions they feel they must visit."

For this achievement a very large share of the credit must be given to the Carnegie United Kingdom Trustees. As early as 1915 they recognised in this institution just one of the special libraries which are included in their general library scheme. We asked them for financial assistance based upon the expectation that the Library would ultimately become independent. The subject in which it specialises is dull, even for a branch of "the dismal science." However, they recognised the value of its service and financed the Library for several years. Its promoters struggled manfully to make it fulfil its purpose, and in this they succeeded. But they utterly failed to make it popular. They had to go into the highways and hedges and compel students to come in. This year I had to confess to my generous fellow trustees that the library could no longer be maintained in a state of efficiency when their subsidy was withdrawn.

There is, however, hope for the Library, or I should not be occupying your time. My own life work, which I have always regarded as being for a future I shall not see, has been handed over to a Trust, which the Trustees insisted upon calling the Horace Plunkett Foundation. It stands for a certain idea of rural development, expressed by the Irish formula *Better Farming, Better Business, Better Living*. I like to think of its three English Trustees, Sir Daniel Hall, Mr. C. S. Orwin and Professor W. G. S. Adams, as supplying respectively the three ingredients of the Irish prescription for agricultural development and rural reconstruction. I need not here elaborate the significance and implications of the formula, its working principles or the agricultural policy to which it points. But it is relevant to note that *Better Business* means essentially the reorganisation of the farmers' business on co-operative lines. For this, an immense amount of detailed information is required.

Last July my Trustees held a meeting in Dublin. Naturally, they had before them the hard case of the Co-operative Reference Library. With much regret they decided that their commitments

made it impossible for them to finance it into continued efficiency. Furthermore, they came to the conclusion that it had so largely fulfilled its function in Ireland, and that the chance of its being sufficiently resorted to there by paying students who would make it more or less self-supporting, was remote. At the same time, they felt that this unique collection of books, pamphlets, reports, etc., relating to co-operation, should neither be dissipated nor inaccessible for want of a competent librarian. They have applied to the Carnegie Trustees for a grant to enable them to remove the Library to London and develop its services there for a period of three years. They made this proposal under peculiar circumstances. Last year, they had convened what proved to be a very successful four days' Conference at Wembley, upon "Agricultural Co-operation in the British Empire." The leading agricultural organisations of the Empire and nearly all the governments concerned were represented. The Conference unanimously adopted the agricultural policy based upon co-operation, to which I have adverted. It further requested its conveners to set up in London a Clearing House as a centre of information for the widely scattered agricultural co-operative movements represented. This has been done; and my Trustees are thus in an exceptionally favourable position to take charge of the Library and see that it fulfils its purpose.

I expect that the application will be sympathetically considered because the Library in the new conditions would subserve the Carnegie United Kingdom Trust's policy of rural development which is making signal progress. Many people think that if the British farmers derived one-half of the benefit which has accrued to their continental brethren from the practice of co-operation, one at least of the causes of chronic agricultural depression would be removed. I speak not without knowledge when I give it as my considered opinion that an all-round improvement in the industry, the business, and the life of the workers upon the land would result. But, leaving aside agriculture, as most people do when thinking upon the graver problems confronting the civilisation to which we belong, I submit that the thought hitherto devoted to co-operation in Britain leaves much to be desired. The industrial co-operative movement has played a great part in the social and economic development of the British people in recent times—and yet, to my thinking, a strangely restricted part. In distribution vast economies have been effected among the working classes. On the other hand, the dream of ensuring to the worker his rightful share in the fruits of his labour and in the control of his industry, through co-operative ownership of the raw material and implements of production, has been realised to but a small degree. Among what are called the upper classes, I often hear such observations as "Oh, yes, I believe in co-operation. Why I belong to the Army and Navy." There is more in co-operation than is dreamed of in their philosophy. Of late I have often wished that I had devoted my life to the possibility of its application to coalmining, with which I happen to be more or less familiar, as from that source I derive what I spend upon the co-operation in which I have specialised.

Just one word more. The case for an intensive study of co-operation at the present time, and, more particularly, for a supply of accurate knowledge for those who wish to explore its possibilities for good, would not be complete without taking into account one overriding consideration. There are not a few thinkers upon the foremost issue of the day—I mean, the respective interests, duties and rights of labour and capital—who see in co-operation, broadly conceived and thoroughly understood, the true, the natural mean between the two extremes of communism and capitalistic control of the sources of wealth. May not this solution be worthy of the fullest investigation? Be this as it may, I hope you will welcome the institution I have had the honour to introduce to your notice into the family of special libraries your Association exists to foster and promote.

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Mr. C. S. ORWIN, M.A. (Agricultural Economics Research Institute, Oxford): My work consists in the study of the economic organisation of agriculture; one of the great difficulties that confronts my colleagues and myself is the impossibility of collecting within four walls a library representative of such a widely-diffused study as that of agricultural economics. We have to rely, therefore, upon the special libraries which other people have collected, for example, the wonderful library of All Souls, and the small, but valuable library of social economics at Barnett House; outside Oxford we have such libraries as that at Rothamsted and at the Royal Agricultural Society, dealing more especially with the historical and scientific sides of the subject.

The study of co-operation is a branch that is growing in importance every day, not only in England, but in other countries. Nowhere, so far as I know, in this country is there any really valuable collection of books dealing with the subject of co-operation; and so, when Sir Horace Plunkett tells us that there is a chance of bringing this most valuable library from Dublin to England, and making it accessible to students in this country, I want to tell him how much it will be appreciated.

Major W. E. SIMNETT, M.B.E., Associate Inst. C.E.: I was not clear from the paper whether the library established at Dublin was purely for reference purposes, or whether any attempt was made, possibly through the distributive channels of the Rural Libraries Movement in Ireland, to get this valuable information into the hands of the Co-operative Associations or of individuals about the country. I should also like to ask whether Sir Horace Plunkett has any settled means of co-operation between his own library and similar collections of material, such as the excellent library at Rothamsted.

Sir HORACE PLUNKETT: The Co-operative Reference Library lends out books to any institutions asking for them, especially to institutions engaged in co-operative work in the technical sense. We keep up a constant exchange with a very large number of libraries.

We do not know for certain that the library will be moved,* but supposing it were, the administration would be vested in the Carnegie United Kingdom Trustees. The work of my life has been to attempt to organise farmers on the co-operative principle, which happens to be the only principle which succeeds in rural life; I attribute the backwardness of agriculture, in so far as it is backward in its organisation in the English-speaking countries simply and solely to the fact that it has not been realised that the joint stock system, which has been so successful in all other occupations, is not applicable to agriculture. I believe Mr. Orwin would support me in the principle that the co-operative system is the only one that is suitable to agriculture where people live on small holdings.

* It was decided in October, 1925, that the Co-operative Library should be transferred from Dublin to London.—Ed.

THE USES OF THE WORLD LIST OF SCIENTIFIC PERIODICALS.

By P. CHALMERS MITCHELL, C.B.E., F.R.S., LL.D.,
D.Sc. (Secretary, Zoological Society of London.
Chairman, The World List of Scientific Periodicals).

The World List of Scientific Periodicals, of which the first volume was published by the Oxford University Press last July, and of which the second and concluding volume is now in preparation, is the result of an effort with several objects:—

I.

To provide an alphabetically arranged list of all periodicals publishing the results of scientific research and in existence since 1900.

In the arrangement of the titles, the List has disregarded inessential words, thus enabling searchers to find entries more easily from inexact references. The date 1900 marks the conclusion of the great Catalogue of Scientific Papers issued by the Royal Society of London. The scope of the term "scientific" is that followed by the Royal Society Catalogue. The term "Periodical" has been interpreted generously, with regard to practical convenience rather than formal accuracy. The Reports of International Congresses are collected separately.

By permission of the Trustees of the British Museum, at the suggestion of Dr. A. W. Pollard, late Keeper of Printed Books, the compilation has been made part of the official duty of the staff of the Department of Printed Books. So laborious a task could not have been brought to a successful issue without the skilled editorship of Dr. Pollard and the zeal and knowledge of Mr. W. A. Smith and Mr. L. A. Shephard, the actual compilers (with the aid of Mr. Leonard Wharton, for the Slavonic entries). The chief sources were the *Bibliographie de la France*, the *Deutsches Bucherverzeichnis*, various card-lists, check-lists, printed catalogues of libraries and MSS. Lists prepared for the World List by the Librarians of many learned Societies and Scientific Institutions.

Actual completeness was impossible to achieve, but the List contains at least 25 per cent. more entries than any other yet compiled and published. By the kindness of Librarians, to whom an editorial edition of the first volume was circulated in Parts, for a purpose presently to be described, a large number of additions have been secured; these will be incorporated in Volume 2.

The List, as it appears in Volume 1, contains over 24,000 entries: the rough guesses of those engaged in the initiation of the scheme ranged from 10,000 to 16,000 entries.

II.

To provide a List of standard abbreviations of titles which it is hoped will pass into common use. This has been prepared by Mr. W. A. Smith, after consultation with myself and various persons with special knowledge. Full reference has been made to lists of abbreviations already in use, but none of these could be adopted entirely. The endeavour has been made to make each abbreviation as short as significance permitted; for example, the sublime condensation of one famous Society, which uses the abbreviation "J." to denote its own Journal, could not pass into general use. In Volume 2, the serial number indicating the full title in Volume 1 will be followed by the standard abbreviation. Entries omitted from Volume 1 will be inserted in their places, being given appropriate numbers, *e.g.*, 11,076, a, b, etc.

III.

To indicate wherever possible at least one Library at a number of Centres in the United Kingdom, where each Periodical is filed. The signs indicating the Libraries, which will be explained in an appendix, will follow the abbreviated title entries in Volume 2. As Volume 1 of the List was printed off, it was sent in Parts to the Librarians at the selected centres who had very kindly undertaken to mark those Periodicals which were contained in the libraries in their charge, and to call attention to any errors or omissions. These marked Lists were then compiled for Volume 2.

FORMAT.

It was intended originally to print the List as one volume, but it soon became apparent that the magnitude of the work made this impossible, especially as it had been decided from the initiation of the scheme to print only on one side of the paper, partly to leave space for notes, additions and corrections in MSS. or other entries, and partly to allow for a single copy to be cut up and mounted as a card catalogue.

ORIGIN, MANAGEMENT AND FINANCE.

The original object of the scheme was little more than to form a guide to the chief scientific libraries in London, with the possible addition of Oxford and Cambridge, so that those engaged in research or in indexing or abstracting the published work on research, might know where to find the chief periodicals, Sir Sidney Harmer, Director of the Natural History Branches of the British Museum, asking me to bring this need to the notice of the Conjoint Board of Scientific Societies. I did so with success. The details of the history of the scheme are set forth in the Preface of Volume 1 of the List. I need repeat here only that we found evidence in the form of promises to subscribe as to a widespread demand for a List; that the Trustees of the Carnegie United Kingdom Trust very generously came to our aid by the

promise of a guarantee (subsequently turned into a grant) of £1,000 towards the cost on condition that the number of Library Centres was greatly increased; and that, as the Conjoint Board of Scientific Societies came to an end whilst The List was still in preparation, it was handed over as a going concern, according to a scheme I drew up, to a Registered Company, limited by Guarantee. As Chairman of the Council of Management of that Company, a heavy burden of responsibility has fallen on me. Fortunately, the Oxford University Press, which undertook the printing (and has carried it out with accustomed technical success) has also undertaken publication. When the issue of the first edition is completed, the World List Company, which is a non-profit sharing body, will remain the formal owners, with the responsibility of deciding on any future editions or supplements. But the cost of preparation is so great that in all probability libraries will probably have to make shift with their own MSS. Notes and Additions for many years to come. I make an appeal now to Librarians, to carry on such work actively, so that the materials shall be in existence if and when a new edition becomes possible.

USES OF THE WORLD LIST.

As I am addressing experts in Bibliography, the description I have given of the World List will have already suggested its bibliographical uses, and I need not detain you on that subject. A List, even approximately complete, of the full titles and places of publication of so large a series of Periodicals must be an invaluable addition to any Library.

The List may be used as the Catalogue of any Library, by the use of a rubber stamp against each of the Periodicals taken, or by the still more effective method of cutting out and mounting on cards the titles of the Periodicals taken. By the use of stamps, using different coloured inks, the List might serve as an indication of the subjects contained in each Periodical.

In any individual Centre where there are several libraries, the List may serve the useful purpose of promoting co-operation by indicating which Periodicals are taken by several libraries and the very large number taken by none. Clearly, it would be to the general advantage to reduce the number of duplicates and to increase the total number taken.

The immense size of the List, however, suggests several more general considerations. It is already clear, from the information we have collected, that most centres take in only a small proportion of the total number of Periodicals; that even the greater centres omit many, and that some of the Periodicals are contained in no library in Great Britain. I am glad to be able to state that the Library of the Science Museum, South Kensington, is making a great effort to fill the gaps. It already contains over 16,000 Periodicals, and I hope that The World List will be of assistance to it in selecting the most important gaps to fill.

Clearly, neither the indexing nor the abstracting of research can be carried out adequately in this country (and there is good reason to believe that Great Britain is better provided in this respect than any other country) until there is access here to all the Periodicals which publish the results of research.

In my view, there is no more urgent need than the establishment in this country of a Central Library, the duty of which shall be to contain a copy of every Periodical publishing scientific research, and to keep it available for the use of indexers and abstracters for at least two years after publication. The business of the chief Librarian and his staff would be to keep in touch with all such Periodicals, see that they were obtained immediately on publication, add all new Periodicals, and record all changes of issue and all temporary or final cessations of publication. No doubt, it would be ideal if the Library could retain the volumes permanently, but if this were too costly, they might be distributed to other libraries for permanent preservation after the fixed period of two years. The permanent endowment of such a Library would cost less than a single cruiser, and would be a better weapon in the struggle for existence in the modern world than a dozen cruisers. I would limit the Library to periodicals containing the results of scientific research, including both "pure" and applied research, not because I undervalue the discipline and the pleasures of scholarship, art and letters, but because whilst these are amenities of existence, making it more pleasant and more valuable, knowledge of nature is a condition of existence itself.

The Library I propose would be in no sense a rival to even the greatest of existing libraries. It would be in no sense a lending library, or even a consulting library. For two years after publication, each Part of each volume would always be in its place arranged in the order of The World List, and available only for abstracters and indexers from recognised organisations and for the librarians of other libraries. If the staff and accommodation were provided, it is even possible that the Central Library might receive free copies of the majority of the periodicals, as so specialised an institution could not interfere with ordinary sales and exchanges and might even increase these by making the periodicals better known. But, however this may be, my two years' experience with the preparation of The World List has convinced me of the urgent need of some such an organisation for making the contents of periodicals known and so turning to full advantage the vast increase of natural knowledge that is being produced in every civilised country.

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Professor A. W. POLLARD, C.B., M.A., D.Litt. (Central Library for Students, London): I think the real novelty and charm of Dr. Chalmers Mitchell's paper was his suggestion of the use of periodicals. The terrible condition of affairs is exposed that we have these 25,000 periodicals. Unfortunately we cannot reduce that number very easily by any action we can take here, but we can, perhaps, make better and more extensive use of them if we can find some means for rendering a higher percentage of them available to students and readers. I should like to ask Dr. Chalmers Mitchell if he could

give us any information as to the percentage of these periodicals which are available in London on the one hand and in the provincial centres on the other.

Dr. CHALMERS MITCHELL: I should think London has probably something like 60 per cent.; no other centre in Great Britain has anything like 20 per cent.

Major W. E. SIMNETT: I am not quite sure of the scope of the term "Science" as used by Dr. Chalmers Mitchell. Does it include what we call applied or mechanical science? I understand it does. Then on the question of the contractions to be promulgated in the second volume, I am not clear whether the producers of the "World List" have consulted any of the Societies who issue these publications; because one or two with which I am connected have an official formal contraction for their publication, and it occurred to me that if there was no consultation with them, those bodies would go on using their official term irrespective of what was adopted in the "World List."

Dr. CHALMERS MITCHELL: We have had a list of the official contractions from most of the great societies. Our difficulty was that they were all different, and what we are trying to do is to get one uniform system.

Mr. F. B. LAWLEY (Independent Labour Party Information Committee): May I ask if the list includes economics and sociology?

Dr. CHALMERS MITCHELL: It does not include economics as such. It includes part of sociology; but, of course, I should have to ask for a definition of sociology.

Mr. B. M. HEADICAR (London School of Economics): I want to express my very bitter disappointment at the treatment the London School of Economics has received in connection with this "World List." Not one word has reached us from any source regarding this "World List of Scientific Periodicals." The London School of Economics takes nearly 3000 current periodicals. If it is wished to complete that list and show additional places where certain periodicals already enumerated may be found, I hope that I, as Librarian of the London School of Economics, may have a chance of undertaking some of this work.

Dr. P. Chalmers Mitchell: Hear, hear!

Dr. Chalmers Mitchell was understood to say that economics was not regarded as a science.

Mr. B. M. HEADICAR: This idea of the central library for periodicals is an enormous one, but I have rather grave doubts in my mind whether it is practicable idea; even if you had room, do you expect to get all the 24,000 periodicals presented, or are you going to pay about £24,000 a year to get them? Such a sum would go a long way towards making more complete some of the libraries which do exist. I suppose Dr. Chalmers Mitchell knows that the League of Nations, through their national committees, has this matter of collecting the names of periodicals issued in different countries in hand.

Mr. H. ROTTENBURG, M.A. (Engineering Laboratory, Cambridge University): I should like to ask Dr. Chalmers Mitchell whether any statistical record is kept of the place of origin of the different periodicals, as it would be rather instructive to see what parts of the world contribute different percentages of these 24,000 periodicals.

Dr. CHALMERS MITCHELL: That would be an admirable piece of research which might be done by a purchaser of the "World List"!

A VISITOR: Can you give me the address at which the publication is being brought out?

Dr. CHALMERS MITCHELL: It is being published by the Oxford University Press.

Mr. L. STANLEY JAST (The Library Association, etc.): It occurs to me that part of the hugeness of the problem to which Dr. Chalmers Mitchell has called our attention may be due to the obsession of bibliographers of the "whole hog"—all or nothing. I am not sufficiently familiar with technical or scientific literature to say, but one knows that in other departments of

periodical literature there is an enormous percentage of pure repetition which does not add anything to knowledge at all. I would like Dr. Chalmers Mitchell to say whether the compilers of the "World List" have ever considered the question of selection. Could not they make a classification of scientific periodicals and say that on the whole this class of periodical contains a great deal of original research, and that this class of periodical does not?

Dr. CHALMERS MITCHELL: At the time Mendel published his first paper it was not thought of any importance.

Mr. L. S. JAST: But it was original.

Dr. CHALMERS MITCHELL: It was original, but the trouble is this, that if you are going to classify what research work is worth keeping and what is not, you have got to use individual judgment. The great thing in indexing and making a guide to literature is to eliminate individual judgment, to let it be done in a purely abstract and impartial way. Librarians in any particular library who are using this "World List" will naturally mark with a blue pencil the particular volumes they have and the particular volumes they think interesting. If I were a librarian I would make the "World List" my catalogue; I would have a dozen coloured pencils and would tick off chemical periodicals with red, something else with green, and so on, so that a person turning over the catalogue could at once pick out the things that are of interest to him.

If you begin to confuse judgment and bibliography, although I am not a bibliographer, I feel convinced you are going to get into very terrible trouble indeed.

Mr. P. K. TURNER ("Experimental Wireless," etc.): There seems to be a necessity for a preliminary volume which shall indicate the places where the "World List" itself may be found, because I think it is quite beyond the means of many of us to take it home. (A VOICE: "Two guineas.") I should like to ask whether very careful steps are being taken to see that the "World List" is widely disseminated. The second point is one which was raised by Mr. Jast, regarding some means of breaking up the enormous amount of work which would be involved in the abstracting of 24,000 periodicals. It seems to me that the obvious method has not yet been mentioned—namely, departmental abstracting; the same applies to the central library, where all these periodicals might be available for two years. Surely it would be simpler to localise the periodicals in classes, and in subjects. Of course, there are periodicals which will overlap, and which might have to be kept in two places. I work in a highly specialised subject, and I should very much prefer to go to a place which was also more or less specialised. On those lines it might be quite feasible to abstract all those 24,000 periodicals; because at the lowest estimate you will have something like 100 wide subjects which would enable the job to be split into 100 parts.

Even if the abstracts were provided, you have the question of languages. I can deal with a good many languages, and I have contributors who can deal with more; but when you get material in the original Russian, for example, it becomes rather difficult. In my own little corner it has been suggested that the leading periodicals in each of the main European countries shall publish in each issue an abstract of all the more important original articles in that issue in Esperanto. The idea is that periodicals which exchange with other countries shall translate those abstracts into their own language, and use them as their abstracts, so that readers in other languages will be able to tell at once where matter is that it is worth while for them to get translated into their own language. That scheme is one, I think, that might be seriously considered on a wider basis altogether.

Mr. J. MENKEN (Business Research Association): I should like to ask Dr. Chalmers Mitchell two questions of definition. In the first place, what is it that constitutes a periodical—what frequency of publication? Would, for example, the "Statesman's Year Book" be considered a periodical? Are the great bulk of scientific publications monthly, or quarterly, or what? My second point arises from the fact that economics is excluded from the "List." I quite see the difficulty of including economics in such a list, because of the number and diversity of publications which contain

economic information. I should, however, like to know at what point the line is drawn, and for what reasons. Does, for example, the subject of Logic come in as one of the sciences? Does Psychology come in? If they are excluded, why are they excluded, and what of the great company of outsiders who cannot claim entry to this Palladium of science?

Dr. CHALMERS MITCHELL: The definition of science which we followed fairly closely was the one which was drawn up by an international council some years ago; it was this international council, composed of delegates from every country in the world, which originally started the "International Catalogue of Scientific Literature." Obviously, if you are going to include economics as such it would be very difficult to exclude politics, to exclude education, and a very large number of other subjects.

As for the definition of "periodical," here again we have had to refrain from attempting any logical classification. We have included in a separate list at the end the reports of congresses, annual, biennial or triennial; but when you have to decide whether things produced monthly or quarterly are periodicals, you are in great difficulties, because you have to remember that the bulk of these scientific periodicals are not commercial productions; they are nearly always produced at a loss. The more prosperous societies try to bring them out monthly or quarterly, but even they have bad breaks sometimes, and a very large number of very important journals come out intermittently.

Mr. FOSTER SPROXTON (British Xylonite Co. Ltd., Manningtree): I think the part of Dr. Chalmers Mitchell's address on which there would be the greatest difference of opinion would be that portion regarding the advisability of having all the periodicals under one roof. Most of us when we want to consult, say, a chemical journal, would prefer to go to the Chemical Society, and we should like to feel sure that all the journals containing chemical information which are in the "List" of periodicals would be found in the library of the Chemical Society.

Then I think the size of the building would be enormous. I do not know whether it would be fair to say that the average shelf space for a periodical would be 6 inches; but 24,000 would mean 12,000 feet, which is over two miles of shelf room every year.

Dr. CHALMERS MITCHELL: I do not think that is quite conclusive criticism. In the library of the Zoological Society we have something like 50,000 books, and the library is not nearly so big as this hall. My idea was that the periodicals would be kept only for two years, and certainly not that this library should displace any of the specialised libraries like that of the Chemical Society and our own, where readers go to read on special subjects, but that this should really be the place where abstracters and indexers could always be at work and could always find the material available. Readers would not go to this library, but to the specialised libraries.

Mr. G. S. DUNCAN, M.A., B.Sc., F.C.I.S. (Society of Glass Technology Sheffield) (Communicated): The value of the information contained in Volume I. of the "World List" would have been enhanced by some details as to the year of foundation and size of each periodical mentioned. This would not have needed much additional space. It would also have been very useful if brief translations had been added of the titles of periodicals printed in languages other than, say, English, French and German.

At the Conference, Dr. Chalmers Mitchell, in reply to my query, was unable to say offhand how many of the periodicals cited in the "World List" were not now published. Possibly some indication as to defunct publications may be made in the Second Volume.

SECOND SESSION - - *Saturday morning,
September 26, 1925.*

Chairman :

Mr. C. R. SANDERSON.

Dr. R. S. HUTTON: I have to announce the receipt of a cablegram from the United States, which reads as follows :

" Best wishes for a most successful Conference. D. N. Handy. President of Special Libraries Association of United States."

May I inform the visitors that we have with us to-day a visitor from the United States, Dr. J. D. Thompson, formerly Director of the Legislative Reference Service of the United States Congress, and Director of the Research Information Service of the National Research Council, Washington.

**THE WORK OF THE COMMITTEE ON INTELLECTUAL
CO-OPERATION OF THE LEAGUE OF NATIONS.**

By Professor GILBERT MURRAY, M.A., D.Litt.

(Committee on Intellectual Co-operation of the League of Nations,
Geneva).

I have been asked to say a few words about the work connected with bibliography done by the Committee on Intellectual Co-operation. That Committee has been one of the least successful branches of the work of the League of Nations. It had considerable difficulties to contend with at the beginning. I am not quite sure that it grappled with all of them in exactly the best way, but certainly the most important reason for its ill success has been one in which I should think everybody can sympathise—complete lack of funds. However, with regard to bibliography there are four or five definite undertakings which have been carried out or recommended to be carried out which I will just mention briefly. There is, first of all, the proposal made by Mr. Hagberg Wright; it is an extremely interesting, simple and practical proposal, namely the suggestion that some responsible librarian, or Committee of Librarians, in each country should draw up annually a list of the more notable books published during that year in a number of subjects. All sorts of questions and difficulties immediately arise; for instance, how large is the list to be? A scale was worked out according to which countries publishing over 10,000 volumes had a right to mention 40 volumes. The scale goes down until you get to countries which publish less than 2,500 books, and they have a right only to send 10. It is very easy, of course, to attack a scheme like that, to say that it is not a "List of the Best Books," to say that it is arbitrary, and that it is imposing somebody's tastes on the world. But there is nothing in those criticisms; the list does not profess to be authoritative; it professes to be a small act of help given by the library men of one country to the library men of other countries. I certainly feel that it would be a considerable

convenience for me to know what were considered the most important historical or legal or philosophical books year by year, or the most important things in belles-lettres, published in, say, France, Germany or Italy. That will be carried through.

The Committee have been trying to facilitate or to get the Governments to facilitate the practice of International borrowing from library to library. The idea is to draw up some sort of general Convention on the subject, probably an informal Convention, to be agreed to separately by libraries. At present when an important book or manuscript is lent from one country to another, it is very apt to be done through diplomatic channels; that is to say, the library gives the manuscript or the important book into the charge of the Foreign Office; the Foreign Office gives it to a Chargé d'Affaires, who is probably not much interested in manuscripts or books; he takes it in his luggage, and gives it to another Chargé d'Affaires in another country, and delay is very great. There is a certain amount of unnecessary expense, and these cumbersome precautions do not tend to increase either the security or the speed of the proceedings. It is much better to have the loan direct from library to library. Proposals have been made to the Governments that for the sending of books in this way there should be either a suppression or a reduction of postal charges, and a complete suppression of Customs duties. It is suggested that each library should draw up a list of the categories of books or manuscripts which it is prepared to lend, and those which it is not prepared to lend.

The great Institute of Bibliography at Brussels, which I am delighted to see is represented here by M. Otlet, has been asked to form a centre of information with regard to these loans to enable enquirers to know in what country particular books or manuscripts of importance can be found. It is also, of course, extremely necessary, if you do encourage any large system of International borrowing, that it shall be quite easy for an independent visitor to a library to know whether the book is in the library or not at the time. I can remember a case of a foreign scholar coming over here in order to consult a manuscript; when he got to England he found it had been sent abroad. There should also be a list of the libraries that are willing to lend. It has been further proposed that this same arrangement should apply to archives and documents, but I should say that in all such proceedings the question of photographing or rotographing the manuscripts or the like has been borne in mind.

An interesting observation was made by M. Destrée, the Belgian representative on the Committee on Intellectual Co-operation, calling our attention to a fact which I am sure has already attracted the attention of all librarians here, namely, the bad quality of the ink and paper used for a great many productions since the War. He tells us that in Brussels they had made a collection of the various proclamations and public documents issued by the Germans during the occupation, and already a great many

of these were illegible; the ink had either eaten through the paper, or had died out, or the paper was beginning to dissolve. That is an extraordinarily short time. I think as a friend of International Peace one may consider that there is an agreeable allegory behind that story. That is a matter on which I think we have nothing more to say except to call the attention of the libraries to the fact. I remember, curiously enough, a book written by Tycho Mommsen, who was a Danish scholar, during the war between Germany and Denmark; he published a book then, and in his preface he comments on the extraordinarily bad quality of the paper on which he had to write; and says that some friend or other has advised him that probably within 15 years the paper will have disappeared and the book will be illegible; he then says he can only hope that if there is anything of value in his remarks in the book they will, before 15 years, have been copied into some other book by somebody else on more abiding paper. So that apparently war generally does deteriorate paper. It is rather interesting to remember at the same time that the book in which I read that is now fully 60 years old, and I had no particular difficulty in reading it.

The Committee on Intellectual Co-operation has also drawn up a convention with the International Institute of Bibliography at Brussels, about which I hope M. Otlet will say something more. There was a question as to the relations between the Institute of Bibliography and the League, and eventually I am happy to say that a sort of official connection was established between the two. Speaking roughly, the Institute of Bibliography undertakes, first of all, to make a collective alphabetical catalogue of authors, covering if I understand rightly, all the books in the world—a perfectly gigantic task upon which it is already engaged. An alphabetical catalogue, of course, is not a very satisfactory thing, so it proposes also to undertake a really systematic catalogue of works on Bibliography, and the technique of books. That is a smaller job, and one hopes that in the course of years it will be able to be carried out. It is also to collect catalogues of Bibliographical works so as to have a very large and as far as possible complete library on that subject. It is to publish the *Index Bibliographicus* and a bulletin, and it is to have an information office. I run through those headings very shortly because M. Otlet knows far more about the subject than I do; he is in fact the centre of this great undertaking. The Committee, out of the abundance of its poverty, undertakes to pay the Institute a subvention. It was originally suggested that a figure should be named, but in the end we thought it fairer not to name any figure. We shall probably, somehow or other, be able to find between, say, 1s. 6d. and half a crown. If in the future the C.I.C. develops owing to the Institute in Paris, and possibly owing to American help, that subvention may become really effective.

I now come to what has been in some ways the most interesting undertaking of the Committee from the purely technical point of view. Madame Curie some years ago brought forward at the Committee the great need for a more complete analytical Biblio-

graphy of the work done in various sciences. There was a great deal of Bibliographical work done, of course, but she explained to us that it was difficult, for instance, in her subject, physics and radio-physics, to know what was being done in different places except by reading articles in a great many different languages; often you had to read the whole of the article instead of reading an abstract which would tell you at once what the article was about. This general subject was discussed, and eventually action was taken regarding physics and physical chemistry. The first thing was to select three Journals, printing bibliographical abstracts in physics and physical chemistry. These were the *Journal de Physique* edited by M. Langevin (who was extremely helpful in these discussions); the *Physikalische Berichte*, edited by Dr. Scheel; and *Science Abstracts*, of which the editor is Mr. Cooper. From the beginning the three editors were most willing to co-operate, that is to say, to divide and co-ordinate their work so that the three Journals between them should cover as far as humanly possible the whole field of physics and physical chemistry. The next question was to get the Societies behind these Journals to agree; of course, as soon as you touch the Societies you touch national susceptibilities, and there are eccentric people in every country who have a violent objection to co-operating with some particular other country. This time the difficulties were not so very great; the only serious delay that was caused—I will not say that it was the only difficulty that existed—was as to whether the German Society was willing to come in; but when consulted the German Society was willing; so that what I may call the political difficulties were got rid of quite soon. Another question was as to the form of the abstracts. The general plan was that the author himself should be asked to make an abstract. The author is in a way the highest authority, and yet he is far from being an impeccable authority, as we all know; accordingly the editor has the right to re-write the abstract. The great necessity is that the abstract should be complete as an index; that anyone consulting the Bibliography would be able to see by reading the abstract everything that is in the article. You leave out the arguments; you give the conclusions; you give as a rule the statistics. If there was (as is sometimes the case in the most considered work) anything irrelevant—any important remark made by the way—it was by all means to be put into the abstract, as otherwise it would be certain to be lost. As to the length of the abstract; it should as a general rule be from 4 to 8 per cent. of the length of the whole article. They tell me that that plan is now being carried out, and looks as if it was going to be quite successful. The field is divided according to language, not according to countries; that is to say, *Science Abstracts* will deal with everything in the English language wherever it appears. There is to be some mapping out of the other countries, and of the articles that are not either in French or English or German. A question then arose affecting the countries which have languages of small extent, and languages that are not well known. Apparently they feel that valuable work may often be published in one of these little known languages and may never

really get into the languages of the great world, so a suggestion has been made that possibly some of these nations that speak the smaller languages would care to co-operate in producing a Bibliographical Journal of Analytical Abstracts to be published in one of the great languages, namely French, German, or English. Enquiries have been addressed to scientific bodies, and to the representatives of the Committee on Intellectual Co-operation in foreign countries asking them in language of a most studiously tactful character whether they would like to co-operate in anything of that sort. Another matter which arose is one which I am sure will turn up in the discussions here on various subjects, namely, the question of having some uniformity of names and symbols in the different sciences throughout different languages. Let us take the case of chemistry; I believe it is the case that in chemistry the symbols are universal. I may be wrong, but I think that if you write H_2O it is understood, and is the accepted phrase for "water" in every language; but in almost any other technical subject you are confronted at once by the great difficulty of variety of terminology. Apparently diseases go by quite different names in different countries, while the names of the causes of death are sometimes almost ridiculously different. So if you are trying to compile any set of International statistics you are up against that difficulty. We have had memoranda on that footing of various subjects. For example, on the terms used in anatomy; a proposal has been made for a nomenclature for every bone in the body according to a system like that employed for chemistry, so that whatever may be the name of the bone in a given language, it can be followed by a symbol which is unmistakable. Curiously enough the same difficulty occurs in a subject like archæology. It occurs, I believe, in engineering; it occurs really in almost everything. Alongside that of course is the need for a perfectly uniform system of technical numeration. It is obvious that the decimal system will have to be generally employed, and that we cannot continue for long the luxury of using degrees Fahrenheit when every other nation is using another system. There have been some proposals for the revision and further development of the International Conventions of 1886 about the exchange of publications; but I will not go into that matter now.

Some people have been a little surprised—though I do not suppose anyone here will feel so—that the Committee on Intellectual Co-operation devoted itself at once to Bibliography as one of its great subjects; a moment's thought, however, will show one the relevance of Bibliography to the cause of all Intellectual Co-operation. It is by reading one another's books that we get into one another's minds; it is by the co-operation of scientific and philosophical research; it is by co-operation in building up literature and art in our different countries that we can hope to get the minds of different nations moving again in concord and working towards something like a common end. The original idea of the Committee on Intellectual Co-operation was to try to help the intellectual life of Europe, which had been torn in pieces by the passions of the

war, and by the economic and other interruptions caused by the war, to flow again in something like a common current. For that purpose Bibliography presented two great advantages; in the first place it roused less objection; it stirred national antagonism less than any other work which the Committee found itself able to take in hand, and secondly, it was in essence (for the reasons which I have just mentioned) the right sort of work for the Committee to be engaged upon. If you can get the nations of Europe into such a condition that the scientific men in Germany are familiar with the work of the scientific men in France and in England, and vice versa; if you find that the historians in one country know what the historians in another are doing; if you produce that state of affairs in which a man who feels some gap in his own country can realise quickly that there is another country something that exactly fills that gap or which gives him just the help that he wants, then, however great or however little the actual achievement, you are at least moving on the road along which the Committee on Intellectual Co-operation hopes that the world will move.

(A vote of thanks to Professor Gilbert Murray for his address was passed with acclamation.)

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Mr. H. ROTTENBURG: I do not think we can imagine any nation secretly arming if it is at the same time inviting Intellectual Co-operation, and it seems to me that here we may find an antidote to war.

Professor GILBERT MURRAY: We recommended a proposal (which was eventually passed by the Assembly) that enquiries should be made in every country as to what steps were being taken to see that children in the schools were informed of the existence and aims of the League of Nations. That has had a considerable effect.

Mr. LEON GASTER, F.J.I. (Circle of Scientific, Technical and Trade Journalists, etc.): The question of symbols in illuminating engineering is a very troublesome one, because not only have we to agree on symbols for the illuminating world, but we have to distinguish them from the symbols in use in allied branches of engineering. It is through the British Engineering Standards Committee that it is hoped to eliminate overlapping in the symbols employed for illuminating work. International work is a most important means of bringing about peace. Science has no geographical boundaries, and is, moreover, a mirror of Truth, and there cannot be two ways of expressing Truth.

Mr. L. STANLEY JAST (The Library Association, etc.): I should like to ask Professor Gilbert Murray whether the Committee on Intellectual Co-operation has considered the question of uniformity in Bibliographical methods—in cataloguing, for example. Some years ago, as all librarians present will know, the Library Association of this country and the American Library Association co-operated through a Joint Committee in devising a system of cataloguing rules which should standardise the methods of cataloguing in English-speaking countries. At the time some effort was made to work it on a broader, that is, on an International basis; that, however, was found to be impossible very largely because certain practices used by bibliographers and librarians in English-speaking countries and certain practices used abroad, could not be reconciled, which was a great pity. Already there is something approximating to a standardised practice in English-speaking countries, which would seem to afford a basis for extension as an International Code.

Professor GILBERT MURRAY: I have heard the subject mentioned several times at the Committee. We on the Committee did not consider that we were sufficiently specialist to take any particular line about it, but the desirability of uniformity has often been mentioned.

Professor F. E. SANDBACH, M.A., Ph.D. (Association of University Teachers): I am here as a representative of the Association of University Teachers, which has set up an enquiry office about which I have to speak on a later occasion. This enquiry office is founded in order to secure the interchange of publications both abroad and in this country. It has, on several occasions, applied to Universities in other countries, France, Spain, Italy, Germany and Austria. We found the Austrian and German libraries willing to do what they could and to lend books, but have got no reply at all to enquiries sent to other countries. I should like to ask Professor Gilbert Murray whether the International Institute of Bibliography in Brussels is in a position yet to inform us in what libraries in other countries particular books can be found, and whether they are also in a position to give us any help in getting those books across to England?

Mr. B. M. HEADICAR (London School of Economics and Political Science): On the question of exchange; last year we spent considerable time in thrashing out the Convention of 1886; we drafted a new one, and now the British Government has intimated that it can be no party to the matter. I do not know whether it is possible for this Association to influence the British Government on this matter?

Mr. K. WALTER (Horace Plunkett Foundation): I should like to ask Professor Gilbert Murray about the new Institute established in Paris. I understand that a division of Bibliography was created in that Institute and a chief appointed?

Professor GILBERT MURRAY: The Institute will be working regularly all the year round (just as is the case with the Secretariat at the League at Geneva). The work of the Committee has been mapped out roughly into seven divisions, but the work of each division has not yet been settled in principle, much less carried into effect. The carrying out of the various things I have mentioned will probably rest directly with the division for Bibliography.

Mr. P. K. TURNER: Professor Gilbert Murray mentioned that in chemistry there are International symbols and Mr. Gaster mentioned that this is also the case in illuminating engineering. It may be of interest to you to know that a similar attempt is being made in electrical engineering, where use is made both of a mathematical notation and of diagrammatic symbols. There is also being published in English (with a view to International Co-operation eventually) a list of the common terms used in electrical engineering with their meanings. The British Engineering Standards Association has done excellent work in that way by codifying the exact meaning of the technical terms in English. In addition to symbols it might be well worth while to establish clear definitions of the precise translations of technical terms.

L'INSTITUT INTERNATIONAL DE BIBLIOGRAPHIE.

Rapport de PAUL OTLET (Secrétaire Général de l'Institut International de Bibliographie, Bruxelles).

M. P. OTLET : (In introducing his paper) : The Institute is devoted to disseminating throughout the world facts and information ; it was founded in 1895, though the last 10 years cannot be counted in the effective life of the Institute. It was one of the originators of the movement which led to the formation of the Committee on Intellectual Co-operation of the League of Nations.

In bibliography and documentation there comes first the collecting of the books ; secondly their cataloguing, and thirdly, the formation of archives or dossiers forming an encyclopedia in which the materials are put into readily available form. In 1910 the Institute published the first International Directory of Special Libraries and Information Bureaux ; the present " Index Bibliographicus " is an enlargement of this.

With regard to methods, we hope to internationalise the Anglo-American cataloguing rules, which are in fact already largely international. For our subject catalogue we have accepted the decimal classification.

The splendid " World List of Scientific Periodicals " which you have produced in England gives an idea of what can be done on an international basis. This list should be completed, not only for science, but for every branch of knowledge. Statistics published in the year 1910 by the Institute of Bibliography indicated that about 12,000,000 books had been printed since the inception of printing, and that there were in existence 72,000 periodicals, including daily newspapers, weeklies and monthlies. You have already heard what has been done with regard to abstracting in physics ; what has been done for physics can equally be done for other branches of knowledge.

We must have a world system doing for books and documentation what has already been done for railways, for electric light and power, and for the postal system.

I believe that a world library system is possible. If starting in this 20th century we can establish a central world library, which functions both as a clearing house and as a depository, we shall achieve our end.

I.—LE PROBLEME.

Le problème pratique de la Documentation présente deux aspects :—

1°. Comment multiplier et développer partout des organismes de documentation locaux, régionaux, nationaux et spéciaux : des bibliothèques spéciales, offices ou services de documentation.

2°. Comment établir un Centre agissant à la fois comme dépôt central de collections universelles prototypes, bureau mondial d'information à l'usage du public, d'organe commun pour la coopération, pour l'échange et l'unité des méthodes.

Pour résoudre ce problème, il faut réaliser un Réseau mondial de communications intellectuelles par l'intermédiaire des imprimés et des documents de toutes matières.

Ce réseau doit être conçu à la manière dont, pour les choses matérielles, on a réalisé les grands réseaux des chemins de fer, de la poste, du téléphone, de la radiotéléphonie, de la navigation, de la distribution électrique. Il faut un Centre, des stations secondaires. Il faut autant de services distincts qu'il y a d'utilités différentes à obtenir. Il faut se servir de tous les organismes qui existent et fonctionnent déjà, ou de leurs éléments, en procédant

suivant les cas, par voie de coopération, de coordination, de fusion ou de refontes. Il faut mettre à la base le principe de l'entente fédérative de toutes les forces, respectant les autonomies, mais les liant par de libres conventions inspirées de l'intérêt mutuel et de la volonté de contribuer à une grande oeuvre.

II.—LES PARTIES DE L'ŒUVRE A ACCOMPLIR.

1° *Bibliographie Universelle*.—La production intellectuelle doit être intégralement enregistrée et par là rendue largement accessible à tous. Elle doit donner lieu à un Répertoire bibliographique universel. Les ouvrages, les périodiques, les articles contenus dans les périodiques, doivent être catalogués : tous les temps, tous les pays, toutes les matières, toutes les formes d'imprimés doivent y être représentés.

Le travail doit être réparti sur la double base nationale et internationale, les Bibliothèques nationales acceptant la responsabilité du catalogue des ouvrages nationaux, les Associations internationales spécialisées acceptant celle du dépouillement des revues. L'entente doit intervenir entre les œuvres existantes et le maximum de ce qui est déjà réalisé devra être utilisé.

La méthode sera celle des fiches ou conduisant aux fiches. Au Centre, on développera les collections prototypes et complètes du Répertoire bibliographique universel dont il sera possible d'obtenir par correspondance des copies photographiques. En outre, chaque bibliothèque installera chez elle, plus ou moins développé, un service bibliographique et le maintiendra en relation avec le Centre. Elle agira comme une station du réseau. Au premier degré, la bibliographie sera celle des titres ; au second degré, combinable avec le premier, elle sera analytique (résumé ou synopsis et conclusions) ;

2° *Catalogues Collectifs*.—Le trésor des livres contenus dans les bibliothèques du monde entier sera aussi catalogué, afin qu'ayant connu les ouvrages qui existent, chacun puisse savoir où ils se trouvent déposés. Il sera constitué auprès de chaque bibliothèque nationale, un catalogue collectif des bibliothèques du pays. Ces catalogues collectifs nationaux seront aussi des stations d'un réseau mondial ; et le service central, s'adressant à eux par circulaire générale, pourra connaître rapidement dans quelles bibliothèques se trouve un ouvrage désiré ;

3° *Prêts Internationaux*.—Une convention internationale règlera les conditions du prêt de pays à pays, les catégories d'ouvrages sur lesquels il pourra porter, les garanties dont il faudra l'entourer, l'organe central responsable de l'exécution et du contrôle des accords intervenus. Les prêts porteront principalement sur les doubles ;

4° *Echanges Internationaux*.—L'œuvre des échanges, dont l'honneur revient à la Smithsonian Institution, doit être révisée et assise sur des bases plus larges. Le système doit fonctionner avec plus de régularité et de rapidité. Il doit s'étendre

à tous les pays et la franchise postale est désirable. Une nouvelle convention est nécessaire et celle-ci doit créer un organe central de coordination et de contrôle ;

5° *Bibliothèque Internationale*.—De vastes collections centrales de livres s'imposent, une Bibliothèque internationale du ^{xx}e siècle, patrimoine commun de toute l'humanité, monument des travailleurs intellectuels de tous les pays, édifié par les mains pieuses de ceux-là mêmes qui ont mission de conserver les livres. Cette bibliothèque est justifiée notamment par les dangers de toute espèce qui menacent les livres, et par la nécessité d'y avoir accès en tous temps, le fond étant mis à l'abri des guerres et des révolutions. La bibliothèque recevrait toutes les publications officielles des Etats, celle des corps savants, les revues, les principaux journaux quotidiens. Un exemplaire de contrôle de toutes les publications échangées par l'intermédiaire du Service des échanges internationaux y serait déposé. Les auteurs y enverraient leurs ouvrages, des collections privées lui seraient données ou léguées, les Associations internationales y déposeraient leurs propres fonds. Et les doubles des ouvrages résultant d'une meilleure coordination des Bibliothèques nationales serviraient aussi à en alimenter les collections et à faciliter par elles le prêt international ;

6° *Encyclopédie Mondiale*.—Il serait constitué sous forme d'archives internationales une Encyclopédie internationale et universelle, répondant aux besoins grandissants de l'heure présente. A chaque question, correspondant notamment à l'un des articles des encyclopédies anciennes, serait ouvert un dossier, et tous les dossiers rassemblés dans des classeurs verticaux constitueraient un seul ensemble. Les dossiers s'alimenteraient du contenu des encyclopédies et des grands traités, pris comme base de l'exposé des questions. Ils se complèteraient des articles extraits des périodiques et des journaux. Des extraits manuscrits d'ouvrages y seraient joints progressivement, et chacun pourrait envoyer, pour y être inclus, des travaux et de simples notes, manuscrits datés et signés. L'Encyclopédie ainsi conçue serait donc tenue toujours à jour et toutes les opinions y seraient représentées. Le dossier serait "international" par son contenu et par le contrôle à exercer de lui. Tous les intéressés, représentés et par les autorités déléguées par les Nations et par les Associations internationales, veilleraient à ce que les différents pays, les différentes sciences, les différentes écoles scientifiques et philosophiques, soient représentés dans l'Encyclopédie, dont les dossiers deviendraient ainsi l'expression même de la réalité et du savoir humain, à chaque moment, sur chaque question. Tous les travailleurs intellectuels, directement ou par l'intermédiaire des bibliothèques agissant comme station du réseau, pourraient recevoir des copies photographiques de tout ou partie de ces dossiers internationaux prototypes. En outre, les bibliothèques établiraient chez elles des réductions de l'encyclopédie pour celles des parties qui les intéressent et contribueraient ainsi à l'enrichissement de l'ensemble ;

7° *Publications Internationales.*—Il sera veillé à ce que chaque branche des sciences soit pourvue d'un système complet de publications correspondants, aux besoins essentiels : traités, périodiques, dictionnaires, bibliographies, recueils de résumés et analyses, recueil des documents essentiels. Ce système sera établi et maintenu par collaboration généralisée et les associations internationales en auront la responsabilité et le contrôle. Les systèmes des diverses sciences seront les branches d'un Système général de publication, conçu comme la partie imprimée et courante de l'Encyclopédie. L'entente interviendra avec les publications existantes afin de les intégrer dans ce système. Rien ne sera sacrifié, tout sera utilisé au maximum. Il faut chercher, par ce moyen notamment à sauver de la crise des imprimés des revues qui menacent en ce moment de sombrer. Il faut enlever à l'arbitraire et à l'esprit trop intéressé des éditeurs la direction de ces publications, parce qu'elles constituent l'outillage minimum indispensable des travailleurs intellectuels. Les grandes Bibliothèques nationales et spéciales ont ici un rôle magnifique à remplir. Elles sont certes un millier dans le monde, véritables coopératives de lecteurs (consommateurs de livres). Les travailleurs scientifiques, associés pour faire paraître les grandes publications, constituent, eux, de véritables coopératives de producteurs intellectuels unis dans les Associations internationales. Il faut maintenant qu'un accord direct intervienne de groupe à groupe. Il serait facile, si les bibliothèques s'entendaient pour apporter leurs souscriptions globales à l'entreprise : d'un côté, les publications seraient assurées de pouvoir paraître, et de l'autre les bibliothèques auraient partout à offrir aux travailleurs une puissante collection internationale présentant le maximum de garantie et d'utilité. Ce résultat serait obtenu par une simple entente entre les "stations" du Réseau mondial et les "stations" des deux sous-réseaux (Publications et Bibliothèques), par l'intermédiaire d'un service central ;

8° *Méthode et Classification universelles.*—Tout cet ensemble suppose l'accord sur certains points de méthodes, tels que les formats, les règles catalographiques, les principes de publications, la classification des matières. Tous les travaux accomplis dans ce domaine, les ententes et standardisations déjà obtenues doivent faire l'objet d'une revision, d'accords généralisés, et, s'il se peut, sanctionnés. Un Code international de règles catalographiques et documentaires et des Tables de classification doivent être arrêtés et largement répandus. L'idée internationale doit y présider. Sur la base de la Classification décimale, déjà répandue dans tous les pays et devenue d'une extraordinaire souplesse, à la suite de perfectionnements récents, le travail devrait se poursuivre. Il faudrait arriver à une édition revisée, complétée et traduite dans les langues de grande civilisation. Il faudrait une édition polyglotte (anglaise, française, espagnole, allemande, espéranto). Elle constituerait une incomparable terminologie, à la fois internationale et systématique. Les bibliothèques en s'associant pour le travail et en y souscrivant en assureraient la réalisation ;

9° *Enseignement Supérieur International du Livre*.—Il faut que les meilleures méthodes de partout puissent être conservées et échangées. Une section du Livre et des Bibliothèques doit être organisée au sein de l'Université internationale elle-même ; les maîtres de partout doivent y venir enseigner à des auditeurs venus, eux aussi, de partout ;

10° *Musée International du Livre*.—Les méthodes, l'histoire du Livre, la technique de sa production intellectuelle et matérielle, doivent être exposées dans la forme muséographique. Une section entière du Musée international doit être affectée à cet objet et servir de base à l'enseignement international.

Ces dix points comprennent l'œuvre la plus importante à accomplir en commun, celle qui a fait l'objet de discussions approfondies et qui est déjà largement commencée. Mais pour obtenir des résultats en grand une Organisation internationale est nécessaire.

III.—L'ORGANISATION.

Elle implique des concours de trois ordres :

1° Dans chaque pays, un organe puissant pour la bibliographie et la documentation, un "Conseil national" groupant fédérativement tous les organismes documentaires nationaux existant dans ce pays, notamment ceux qui utilisent et conservent les livres (Bibliothèques, Offices, Services bibliographiques) et ceux qui les produisent (Sociétés scientifiques, Instituts et Laboratoires, Editeurs). Tous, ils ont à coopérer au plan d'ensemble et à représenter le pays dans l'organisation internationale. C'est ce vers quoi voudrait tendre, par exemple, le Bureau Bibliographique de Paris, élargi et transformé, et ce à quoi est arrivé récemment l'Institut néerlandais de Documentation ;

2° Des Associations internationales spécialisées pour grouper, par grandes branches de science et d'activité, les organismes nationaux et locaux, eux-mêmes spécialisés. On peut citer en exemple le Concilium Bibliographicum de Zurich et la Fédération Internationale de Chimie ;

3° Une Institution centrale de nature encyclopédique et universelle.

IV.—L'INSTITUT INTERNATIONAL de BIBLIOGRAPHIE.

Aux termes de l'article I de ses statuts révisés en 1924 l'Institut est une association exclusivement scientifique ayant pour objet l'étude et le développement de la Bibliographie, du Livre et de la Documentation, ainsi que l'Organisation internationale dans ce domaine.

Il a pour objet notamment de :

1°. Perfectionner et unifier les méthodes bibliographiques et spécialement la classification.

2°. Organiser la coopération pour élaborer ou former des travaux et des collections, spécialement le Répertoire Bibliographique Universel.

3°. Etablir, à cet effet, un Centre international de coordination.

4°. Assurer aux travailleurs intellectuels l'usage des collections spécialement en délivrer des copies et des extraits.

5°. Multiplier en tous pays les services bibliographiques et documentaires.

L'Institut poursuit son oeuvre sur la base d'un Plan d'ensemble, de méthodes standardisées et d'une convention tendant à réaliser un Réseau Universel de Documentation, de Publication et d'Information. Il coopère au Centre International formé par l'Union des Associations Internationales.

Aux termes de l'article IX de ses statuts, il est organisé au sein de l'Institut une double représentation ;

A. REPRESENTATION REGIONALE.—Il y aura dans chaque pays, ou région, un organisme ayant pour objet la Documentation et particulièrement la Bibliographie, et qui agira comme Comité national ou régional. Ce Comité sera autonome, et déterminera lui-même ses statuts, qui doivent avoir un caractère fédératif quant à leurs propres membres et confédératif à l'égard de l'I.I.B. Il désigne sa délégation conformément à ses dispositions organiques internes. Les membres associés sont groupés dans leurs Comités nationaux respectifs.

A défaut d'une telle organisation dans un pays ou une région, pour réaliser la liaison désirable, l'I.I.B. pourra désigner un Représentant national avec voix consultative. Les Gouvernements, participant aux travaux de l'Institut par leurs institutions ou administrations nationales officielles, sont représentées directement au Conseil par un Commissaire ou par le délégué de leur Comité national.

B. REPRESENTATION SPECIALE.—Toute organisation ou association officielle ou privée, ayant un but d'activité internationale et spécialisée dans les branches des connaissances humaines, peut être agréée comme membre effectif de l'Institut et avoir droit à une délégation.

V.—CONVENTION AVEC LA SOCIÉTÉ DES NATIONS.

En novembre 1924 l'I.I.B. a conclu une convention avec la Société des Nations. Celle-ci lui a accordé son patronnage en vue " du développement du répertoire alphabétique par noms d'auteurs dans le sens d'un catalogue collectif des grandes Bibliothèques du monde, indiquant aux chercheurs où se trouve un exemplaire d'un ouvrage déterminé."

Il a été demandé au sein de l'Assemblée de Genève, au moment de la ratification de cette convention, que le patronnage s'étende aussi au Répertoire par matières. La S. D. N. a accordé une aide purement morale et non financière, malgré les regrets exprimés par quelques membres et la reconnaissance dans l'exposé des motifs que la Bibliographie est à la Base du travail

scientifique.—Par une regrettable compréhension des principes de coopération intellectuelle, l'Institut sera donc obligé de procéder lui-même à la négociation d'accords séparés avec chacun des gouvernements intéressés et ils sont au nombre d'une soixantaine. Lors des discussions auxquelles donna lieu ; au sein de la S.D.N., la création de l'Institut international de coopération intellectuelle à Paris, une résolution formelle est intervenue pour déclarer que cet Institut ne s'occuperait pas des domaines bibliographiques entrant dans l'oeuvre de l'I.I.B.

Dans son rapport à l'Assemblée de la Société des Nations, 1 septembre 1924, (Procès-verbaux p. 428) M. Gilbert Murray s'est exprimé en ces termes : "Soucieuse de perfectionner ce qui existe avant d'entreprendre des créations nouvelles, et suivant en cela les décisions mêmes du Conseil et de l'Assemblée, la Commission de Coopération intellectuelle nous a proposé un projet d'accord avec l'Institut international de Bibliographie de Bruxelles. La deuxième Commission très heureuse de voir produire, cette collaboration avec une institution qui a rendu et est appelée à rendre encore de grands services aux chercheurs et aux savants, l'a approuvée."

La Bibliothèque de la Société des Nations et la Bibliothèque du Bureau International du travail ont adopté la classification décimale de l'I.I.B.

VI.—BIBLIOTHEQUES SPECIALES ET OFFICES D'INFORMATION ET DE DOCUMENTATION.

Dans une organisation d'ensemble, un rôle important est assigné aux Bibliothèques spéciales ainsi qu'aux Offices d'information et de documentation autonomes et aux services similaires qui fonctionnent au sein des administrations, associations ou instituts scientifiques et techniques.

Le Congrès international des Bibliothèques réuni à Paris en 1923 a approuvé les plans de l'I.I.B. en adoptant les deux résolutions suivantes :

"13.—Que les Bibliothèques spécialisées développent leur rôle d'Office d'Information et, se tenant en rapport avec les Associations scientifiques, professionnelles et industrielles, s'ouvrent largement aux travailleurs et établissent entre elles, dans chaque pays et de pays à pays des relations permanentes.

Que soient également multipliés les Offices de Documentation, en connexion avec les Bibliothèques et qu'ils soient reliés entre eux par branches de connaissance, par pays, et de pays à pays en profitant le plus possible de ce qui existe déjà, et que par l'intermédiaire d'un Institut Central ils forment entre eux un Réseau universel pour la Documentation."

(Rapports de MM. Henriot, Philbert, Levy, Reizler, Fontana, P. Otlet.).

"14.—Que dans chaque pays la Bibliothèque nationale ou Centrale assure la conservation de la totalité de la production du Pays ;

Que les acquisitions de Livres étrangers fassent l'objet d'une entente entre les diverses Bibliothèques générales et spéciales pour la Constitution d'un Fichier Général, indiquant où et comment se trouvent ces ouvrages étrangers nécessaires ;

Que ces fichiers nationaux établis par noms d'Auteurs suivant le désir exprimé par la sous-Commission de Coopération intellectuelle de la Société des Nations puissent être centralisés à l'Institut International de Bibliographie."

(Rapports de MM. Tourneur, Reizler, Otlet.)

VII.—L'OEUVRE DEJA REALISEE.

A. LES REPERTOIRES.—Outre les 13 millions de fiches classées que comprend aujourd'hui le Répertoire Bibliographique Universel du Siège central, il a été publié jusqu'à ce jour en coopération 139 contributions imprimées (*Bibliographia Universalis*.) Elles contiennent ensemble environ 1,300,000 notices bibliographiques, classées selon la classification décimale, et dont certaines sont imprimées directement sur fiches du format standard. Toutes ces notices ont servi à enrichir d'une part, le Répertoire Bibliographique Universel prototype installé au Centre de l'Institut et d'autre part les Répertoires particuliers installés dans les organisations affiliées.

Pour la technique sont publiés aujourd'hui en fonction du Répertoire Bibliographique Universel et directement utilisables par tous les offices de Documentation, la "*Bibliographia technica*," la "*Zeitschriftenschau*," la revue "*Chimie et industrie*," la "*Revue générale de l'électricité*," *Technos*.—Dans le domaine des sciences pures les *Bibliographia zoologia*, *anatomica*, *physiologica*, sont publiés sur fiches par le Concilium Bibliographicum de Zurich. "*Technisch en Wetenschappelijke Litteratur*" est publiée en Hollande.

Pour les autres contributions, mention doit être faite des Tablettes Documentaires publiées par l'Union internationale des Villes ; de la Bibliographie des chemins de fer publiée par le Congrès international des chemins de fer etc.

En ce qui concerne les Bibliographies nationales, mention spéciale doit être faite de la Belgique qui possède un système complet de Bibliographies. Les ouvrages belges sont enregistrés dans la Bibliographie de Belgique qui fait fonction en même temps de catalogue de la Bibliothèque royale, attendu que celle-ci est la dépositaire de toute la production nationale. Il est publié un relevé des articles de revues et un recueil d'analyses des principaux travaux scientifiques. La classification décimale est appliquée à ces divers recueils et, avant la guerre, il existait une édition sur fiches de la Bibliographie des livres, double lien avec la Bibliographie Universelle.

Comme autre type caractéristique de Bibliographie nationale, publiée en fonction de la Bibliographie Universelle, il faut citer celle de la Russie que fait paraître tous les mois la Chambre du Livre à Moscou.

B. TRAVAUX ET SERVICES DIVERS DE L'INSTITUT.—

1°. Cinq Conférences internationales de Bibliographie et de Documentation ont eu lieu en 1895, 1897, 1900 1910, 1920.

2°. L'Institut depuis sa fondation a édité un Bulletin publiant des études d'ensemble d'ordre théorique et pratique et donnant une idée du mouvement bibliographique mondial. Il est polygraphié depuis la guerre.

L'Institut fait paraître aussi, en une collection formant série, des publications séparées sur ces diverses questions ; leur nombre s'élève à 143.

3°. L'Institut réunit une Documentation sur les organismes et les recueils bibliographiques existants. Il en a publié diverses listes avant la guerre. La Société des Nations, d'accord avec lui a depuis publié elle-même l'Index Bibliographicus dont les suppléments seront continués à l'avenir par l'Institut.

4°. L'Institut a organisé pour l'usage de ses Répertoires et collections un service d'information orale (gratuit) ou par correspondance (remboursement de frais). Tous les travailleurs intellectuels ainsi que les Bibliothèques et les Offices de documentation peuvent recourir à ce service.

5°. L'Institut réunit en les coordonnant les données relatives à la statistique du livre. Il élabore des cadres uniformes pour cette statistique.

6°. Sont formés ou en voie de formation :

(a). La Commission internationale de la classification décimale. Elle travaille activement à la mise à jour et au développement des tables publiées en 1905.

(b). La Commission internationale des règles catalographiques. Elle prend comme base de ses travaux les règles catalographiques anglo-américaines et le projet de règles internationales présenté à la Conférence bibliographique de 1910.

7°. L'Institut a organisé un Musée Bibliographique consacré à l'Histoire et à la technique du livre ainsi qu'aux méthodes documentaires. Il a organisé aussi un enseignement et un stage pratiques pour ces méthodes.

8°. L'Institut poursuit des recherches sur les progrès du Livre en général, notamment ceux des Périodiques, des Traités et des Encyclopédies. Le livre est une invention humaine. Comme tel, il est appelé à se développer et à se modifier constamment. Les essais sur le livre microphotographique (livre projeté) ont abouti à des résultats très satisfaisants. Les études sur la représentation synthétique des données des sciences en tableaux intuitifs et sur l'emploi des schémas se poursuivent. La section de Psychologie Bibliologique (Lausanne, Dr. Roubakine) a abouti à des résultats théoriques et pratiques pleins d'intérêt.

9°. L'Institut poursuit la propagande pour les méthodes et la coopération internationale. Il possède actuellement des membres individuels dans la plupart des pays. C'est à eux qu'il

fait appel en vue de voir se constituer les sections nationales et internationales.

10°. L'Institut International de Bibliographie fait aujourd'hui partie intégrante du centre formé à Bruxelles au Palais Mondial par l'Union des Associations Internationales, centre qui comprend aussi le Musée, la Bibliothèque et les cours d'été de l'Université internationale. Toute l'oeuvre de l'I.I.B. est conçue et développée comme une partie de l'organisation internationale du travail intellectuel dont les principes ont été élaborés par les Congrès mondiaux de l'Union des Associations internationales.

VIII.—COOPERATION AU REPERTOIRE BIBLIOGRAPHIQUE.

En ce qui concerne les Organisations Nationales, les dispositions suivantes résument le plan arrêté par l'I.I.B. et dont il poursuit l'exécution par conventions particulières.

1°. Que dans chaque pays fonctionne une organisation nationale (existante ou à créer) en vue d'assumer la représentation de la Bibliographie nationale (productions du pays) dans l'organisation générale.

2°. Que ces organisations acceptent de se relier à l'I.I.B. et d'être représentées dans son Conseil.

3°. Que chaque organisation nationale envoie régulièrement sur fiches les titres de tous les ouvrages publiés dans le pays pour figurer dans le Répertoire Bibliographique Universel ; qu'elle fasse aussi parvenir, s'il se peut, en cinq exemplaires, des copies de tous les catalogues imprimés dans le pays.

4°. Que l'organisation nationale assure un service de catalogues central des Bibliothèques du pays auquel puisse s'adresser l'I.I.B. et directement tous les intéressés pour connaître dans quelle Bibliothèque du pays se trouve conservé un ouvrage déterminé.

5°. Que dans les Bibliothèques spécialisées de chaque pays, ainsi que dans les Offices de documentation et d'information prennent place les trois formes de la documentation : Collection d'ouvrages (Bibliothèque), Bibliographie, Encyclopédie documentaire.

6°. Que l'entente intervienne entre tous ces organismes, nationalement, et ensuite internationalement à l'effet de répartir entre eux le catalogage et le dépouillement des Périodiques spéciaux selon les règles communes arrêtées et avec un inventaire soigneusement tenu à jour.

7°. Qu'une copie des dépouillements originaux soit envoyée à l'I.I.B. (copie manuscrite, dactylographique, photographique ou imprimée).

8°. Que l'I.I.B. puisse s'adresser directement à ces organismes pour obtenir des renseignements, notamment, pour ses enquêtes par filière ou demandes accompagnées des fiches déjà possédées par le Centre et, successivement, de celles recueillies par les institutions invitées à les compléter.

9°. Que les travaux bibliographiques qui existent à l'état de fiches (manuscrites) inaccessibles aux travailleurs intellectuels soient autant que possible centralisées au siège de l'I.I.B.

10°. Que dans la mesure du possible dans chaque pays soit établi sur fiches un Répertoire Bibliographique National classé par auteurs et par matières et établi en connexion de plan, de méthodes et de coopération avec le Répertoire Bibliographique Universel prototype de l'I.I.B. Le Répertoire National doit comprendre, par duplication de celui-ci, les parties qui en seront utiles pour les besoins nationaux et régionaux. En conséquence il serait formé par :

a/. Des copies de fiches du Répertoire Universel à l'état manuscrit ou imprimé (*Bibliographia Universalis*).

b/. Les fiches de la Bibliographie nationale.

c/. Les fiches du Catalogue collectif des Bibliothèques du pays avec indication du lieu de dépôt.

d/. Les fiches des travaux originaux entrepris dans le pays (duplicata des notices sont envoyées au Répertoire Universel).

Le Répertoire Bibliographique National de chaque pays ainsi établi serait installé et rendu accessible au public dans un établissement public de la capitale (Par ex. la Bibliothèque Nationale.) Il pourra être conçu, soit comme un Répertoire centralisé, soit comme une union des Répertoires particuliers, spéciaux, répartis entre les stations fédérées d'un réseau national d'offices de documentation autonomes ou de services de documentation faisant partie de bibliothèques publiques, générales ou spéciales, de musées, d'associations scientifiques instituts, universités, établissements d'enseignement.

SOURCES A CONSULTER.

a/. Publication de l'Institut international de Bibliographie, n° 128 : Paul Otlet. Organisation internationale de la Bibliographie et de la Documentation, 1920.

b/. Publications de l'Union des Associations Internationales : n° 98, "Le Centre International. Le Palais Mondial" (1920),—n° 97, "L'Organisation internationale du travail intellectuel (1921),—n° 105, "Introduction aux travaux de la Commission de Coopération intellectuelle de la Société des Nations" (Paul Otlet, 1922),—n° 107, "L'Union des Associations internationales et la Société des Nations" (Paul Otlet, 1923).

* * *

Mr. R. BORLASE MATTHEWS (Consulting Electrical Engineer) : I should like to ask Professor Otlet when a new edition of the Brussels Index is likely to appear ; also, could he tell us what is happening with regard to collaboration between the Dewey classification and the International expansion of Dewey's classification ?

M. P. OTLET : The reprinting of the decimal classification is a question of finance. Many of our friends have been asking for a new edition for the past 20

years, and a Committee is now preparing the extension of the classification. In reply to the second question : last year we had a meeting with Mr. Dewey personally in order to see how best to achieve co-ordination between the two classifications. The Brussels classification has a new system of auxiliary tables, as you know, but it is desirable to have greater unification between the two systems. We hope in time to issue a polyglot edition in English, French, German and Esperanto.

Dr. E. A. BAKER, (London University School of Librarianship): On our programme we see references to many attempts at co-ordinating labour all over the world ; there is the Co-operative Reference Library, the great " World List of Scientific Periodicals," the International scheme of which M. Otlet has just been speaking, and many others. How are these efforts to be co-ordinated ? I do hope that in the deliberations of our Committee some effort will be made to enlighten the Committee on Intellectual Co-operation on what is being done in such fields as Bibliography ; otherwise a great deal of labour is bound to be thrown away.

THE DECIMAL CLASSIFICATION OF THE INSTITUT INTERNATIONAL DE BIBLIOGRAPHIE AND ITS IMPORTANCE AS A KEY TO THE WORLD'S LITERATURE.

By Professor A. F. C. POLLARD, A.R.C.S., F.I.P., A.M.I.E.E.
(Imperial College of Science and Technology.)

The institution of the Association of Special Libraries and Information Bureaux in this country should be heralded with a fanfare of trumpets, and intellectual workers in every sphere of activity should be deeply grateful to the initiators of this important movement and give it all the support in their power.

The written record of man's activities in various tongues, in all civilised areas of the globe, in multifarious publications, is accumulating at a rate so great that no central body up to the present has been able to deal with it, measure it, co-ordinate it, analyse it or redirect it into those channels where, like a priceless heritage, it can be turned to the most efficient use for further development and certain progress.

This default, the failure to elaborate and perfect this ultimate object of the written record, is in itself a psychological phenomenon difficult to understand.

Speaking from the view point of two great but, nevertheless, restricted fields, nearly every serious worker in science and technology knows to his bitter cost the constant overlapping of endeavour—a kind of inertia to human progress—which takes place in almost every sphere through “lack of information.”

Various attempts have been made, from time to time, to collect and distribute information, and there are at the present time a very large number of such publications devoted to special subjects. The greatest of all these is, perhaps, the *International Catalogue of Scientific Literature*, which, amazingly enough, has come to an end.

Many such catalogues and indexes have suffered the same fate, and it would appear that a prime duty of this Association is to study the economic factors which have brought about these destructive changes, and the necessary conditions for centralisation and unity.

Without centralisation and unity in the methods, aims and sympathies in collecting and distributing information, no progress in so vast a matter can be made, and ineffective effort must inevitably be the result.

It may indeed be found that these failures of the past are due in great part to the want of the very factor they profess to supply, *i.e.*, information.

Any institution devoted to Bibliography should immediately apply itself to the study of the methods of similar institutions in the past and the present, should endeavour to convene convocations

between the existing institutions, with the main object of securing universal unity of method.

Of the many branches of this vast subject, I shall, with your permission, devote myself to one which, I venture to think, is the pivot upon which all others turn, *i.e.*, the method of actually classifying and indexing the bibliographical matter of the world.

It is evident that if some single and well-proven bibliographical classification is accepted, and all those concerned agree to abide rigidly by its rules and to introduce no changes in the scheme without the sanction and approval of the central body from which the classification emanates, half the battle is won.

At least 150 bibliographical schemes of classification have been devised, of which about 50 were created before the XIXth century.

THE DECIMAL CLASSIFICATION.

Of all these, that devised by Melvil Dewey, the Director of the New York State Library, has stood out as the most hopeful, and though pre-eminently successful in the classification of books, has been found to be confusing and clumsy when applied to greater bibliographical detail, such as that contained in individual scientific and technical papers, and it is just these details the student requires to find.

Dewey described his system in a work entitled "Decimal Classification and Relativ Index," first published in 1876. Possibly most of those present are fully acquainted with Dewey's decimal system; but perhaps I may be permitted to describe this system briefly, for the benefit of those who do not know of it, especially as it must be fully understood in order to comprehend the system developed from it, which is the subject of my discourse.

In order to establish an infinite series of numbers having the necessary properties for the purpose of a bibliographical classification, it is supposed that the whole of knowledge is represented by unity. The first ten decimal divisions of unity, then, represent ten great groups, in which may be classed all the subjects that can be made the object of an intellectual work. Each of these primary groups can be further divided into ten, each of which will represent more detailed division of the primary group, and by further division, it is evident that the representation of further detail within any group can be carried out to any extent. Moreover, the decimal number which represents any division of any group has a definite numerical position in the possible infinite complex of unity, and no matter how extended the sub-division of any one group may become, the numerical order of the decimal numbers constituting the two groups on either side of it remains undisturbed.

Thus it will be seen that any subject of an intellectual work, once it has been arbitrarily assigned a decimal number, can be placed in a definite numerical position in a collection of bibliographical matter; it can at once be found and, if necessary, be further sub-divided without in any way disturbing the numerical order of the rest of the matter.

The first primary division of unity comprising all numbers between 0·0 and 0·1 has been assigned to works dealing with general subjects which cannot be contained in the more definite nine primary divisions 0·1 to 0·9, or are concerned with subjects of several of those divisions.

This division will contain such works as the subject with which we are at the moment concerned, bibliographies, encyclopaedias, etc., etc.

The nine other primary divisions are established as follows :—

- 0·1 Philosophy.
- 0·2 Religion. Theology.
- 0·3 Social Sciences. Law.
- 0·4 Philology. Languages.
- 0·5 Natural Sciences. Mathematics.
- 0·6 Applied Science. Industry.
- 0·7 Fine Arts.
- 0·8 Literature.
- 0·9 History. Geography. Biography.

Each of these is again sub-divided, and as an example, the primary group 0·5, *Science*, may be taken, which is divided as follows :—

- 0·51 Mathematics.
- 0·52 Astronomy. Geodesy. Navigation.
- 0·53 Physics.
- 0·54 Chemistry. Mineralogy.
- 0·55 Geology.
- 0·56 Palaeontology.
- 0·57 Biology. Anthropology.
- 0·58 Botany.
- 0·59 Zoology.

By further sub-division of these secondary groups and the succeeding groups, the decimal equivalent of a single subject is quickly reached. Thus :—

- 0·53 Physics.
- 531 *Mechanics.*
- 5315 *Gravity. Ballistics.*
- 53157 *Internal Ballistics and the energy of Projectiles.*

It will thus be seen that a conception requiring many words to describe it in English is represented by a decimal number of 5 figures, occupying a definite position amongst all decimal numbers, and independent of the tongue in which the conception is expressed.

All works, papers, memoranda, notes, etc., dealing with internal ballistics from the point of view of physics, and bearing the index number 0·53157, will be filed together, and the finding of any one of these will lead to the discovery of all the information upon that subject contained in the whole collection.

By the addition of one figure to this decimal number, nine more divisions can be formed, any one of which may be equivalent to a more detailed sub-division of the subject, and evidently these

sub-divisions can be inserted between the two previously established divisions without disturbing their numerical order.

In practice, it is convenient to omit the decimal point, and the decimal numbers are written as whole numbers. Thus the number of our example will be written as 53157, but in order to aid the memory and eye by emphasizing certain sub-divisions, it has been found useful to sub-divide the numbers into groups by means of points. Thus the above number written as

531.57

at once indicates the 7th sub-division of the 5th division of the group 531, *Mechanics*.

The order in which the different decimal or index numbers will be classed is merely that of the decimal numbers.

Thus the sorting of cards, for filing in decimal order, becomes a simple mechanical process, which can readily be done by cheap labour.

But now comes a difficulty.

Suppose that the collection of information upon internal ballistics is so great that it is necessary further to sub-divide this group into greater detail, thus :—

- 531.571 *Law of combustion in closed vessels. Velocity and pressure of combustion.*
- .572 *Law of combustion of powders in guns.*
- .573 *Pressure on the breech. Strength of guns.*
- .575 *Spin of the projectile. Effects and resistance of the rifling in guns.*
- .576 *Velocity in the gun.*
- .577 *The motion of projectiles in resistant media.*
- etc.,

there is no room left for the sub-division of works upon internal ballistics in general into treatises, scientific papers, periodical journals devoted to the subject, or for special descriptions of testing stations, or for works dealing specifically with the mathematical side of internal ballistics in general, and a host of other desirable sub-divisions which may arise.

Thus the simple decimal system of Dewey, directly it is called upon to deal with detail in the subject, fails as a classification capable of universal application.

But in 1895 the first International Bibliographical Conference, at Brussels, which had to search in a spirit of impartiality for the principles on which it could establish a universal bibliographical classification, decided that the Dewey system was founded on such principles, and was capable of being transformed into a highly satisfactory classification.

The Institut International de Bibliographie, the first and present Secretary of which, Mons. Paul Otlet, honours us with his presence this morning, which was founded to continue the work of the Conference, assumed the task of developing and transforming the Dewey system, and published the first edition of the *Manuel*

du Répertoire Bibliographique Universel in 1899. The second edition of this monumental work appeared in 1904, and contains a highly-developed and extended classification in all branches of intellectual activity, together with certain auxiliary tables of special decimal numbers which can be used to overcome the difficulties I have stated. The work is completed by a full explanation of the rules to be observed in indexing bibliographical matter, the formation of special indexes, etc., etc., and an extensive alphabetical index to the subjects contained in the tables of the decimal classification.

There can be no doubt that this developed decimal system of the Institut International de Bibliographie is the most perfect, and at the same time the simplest and cheapest method of indexing bibliographical material which has ever been devised.

Its great simplicity and elasticity can be seen and tested by anyone who cares to inspect, or better still, make use of the *Répertoire Bibliographique Universel*, which is now housed in the Palais Mondial at Brussels, and if I may be allowed, I strongly advise this Association to visit this important prototype of its own activities in Belgium.

In 1920 this great index contained twelve million cards, on each of which a single bibliographical notice is inscribed.

It will now be necessary to explain the unique features of this decimal system, which by the application of its signs, and auxiliary numbers to the simple decimal numbers, converts the imperfect Dewey system into a powerful tool of bibliographical research worthy of universal recognition and use.

SPECIAL USE OF THE INTERCALATED ZERO.

In the first place, it was recognised that with the exception of the zero which forms numbers in the primary group 0·0 to 0·1, the zero when used elsewhere must be regarded in the light of special rules, if confusion is to be avoided.

The intercalated zero is thus used to form special tables of auxiliary numbers which are used in an analytical sense. There are two distinct sets of these numbers.

Those commencing with a double zero indicate a "Point of View," and constitute the *Common Analytical Sub-divisions*.

For example, such an "Analytical" number is

...0062—*Establishments and premises connected with the study of a project or with research.*

This can be associated with any simple decimal, such as

531.57 *Internal ballistics,*

giving

531.57.0062 *A testing station devoted to internal ballistics of guns.*

or if the written work is restricted to the description of some

laboratory devoted to testing the strength of guns, it is indexed with the number

531.573.0062.

On the other hand, numbers commencing with a single zero are not applicable to all the simple decimal numbers, but only to the whole or part of one science, and have consequently a special meaning for each science. These analytical numbers constitute *Special Analytical Sub-divisions*, which will be found at the head of those divisions to which they exclusively apply, together with notes upon their use.

For example, at the head of

624 *Bridge Engineering*,

such a series of numbers will be found, and one of these is

. . .04 *The calculation of the elements of bridges.*

So that, if we have a scientific paper on the calculation of the strength of the cables of a cable suspension bridge, it should be indexed with the number

624.52.04

since

624.5 represents *Suspension bridges*,

and

624.52 *The cables and chains of suspension of such bridges.*

SIGNS OF COMBINATION.

The intercalated zero used in the manner described above may be regarded as a combination sign.

Other signs are found to be necessary for the formation of compound numbers which permit complex notions, frequently encountered in the analysis of subjects for classification, to be expressed in a uniform and orderly manner.

The signs are extremely simple, and consist of the parenthesis (. . .), inverted commas " . . . ", the sign of equality =, the colon : and the hyphen -.

THE COMMON SUB-DIVISIONS.

In addition to the two series of Analytical Sub-divisions, there are the *Common Sub-divisions of Place, of Time, of Language and of Form and Generalities*, which are distinguished by the parenthesis, the inverted commas, and the sign of equality.

These Common Sub-divisions, like the Analytical Sub-divisions of Points of View, are grouped into Auxiliary Tables of decimal numbers, and may be associated singly or conjointly with any simple decimal number in the classification.

THE SUB-DIVISION OF FORM AND GENERALITIES.

The parenthesis in combination with numbers commencing with zero gives rise to sub-divisions which are employed to indicate the form, the origin, the destination, or the special nature of the work under consideration.

Thus :—

and so . . . (021) *A Treatise on . . .*
 53(021) *A Treatise on Physics.*
 . . . (03) *A Dictionary of . . .*
 . . . (05) *A Periodical Publication.*
 . . . (06) *A Publication issued by a Society.*

In addition to this group of form numbers, there are special groups, symbolised by figures preceded by a double zero within parentheses, which are applicable to particular parts of the classification in exactly the same way as the Special Analytical Sub-divisions.

Thus, for the division 6 *Applied Science*, such a group has been created, and *patents* will be found here symbolised as (008).

THE SUB-DIVISIONS OF PLACE.

When, however, the parenthesis encloses numbers commencing with a figure other than zero, Sub-divisions of Place are formed.

When the numbers commence with 1, Geological, when with 2, Physical, and when with 3 to 9, Political Place numbers are formed.

Thus :—

. . . (115) *Carboniferous rocks.*
 . . . (285) *Lakes.*
 . . . (42) *England.*
 . . . (94) *Australia.*

so that we may unite, for example,

5(05)(94)

to indicate *Australian periodicals on Science,*

or

53(021)(42) *English Treatises on Physics,*

and thus *Thomson and Tail's Natural Philosophy* would bear this index number.

SUB-DIVISIONS OF TIME.

The inverted commas form Sub-divisions of Time, by enclosing within them the dates which assign limits to or specify the period of events.

Thus 9(42)" 1467 " *History of England—in 1467.*

These sub-divisions are rarely used, but the writing of dates in the decimal manner is important, for all bibliographical notices should be preceded by the date the work appeared to the world, and when a large collection of cards relating to the same subject and bearing the same decimal number is filed in order of the decimally written date, the historical growth of the subject is automatically revealed.

The decimal notation of dates is secured by invariably assigning two figures to the designation of the month and two figures to the day of the month.

Thus " 1918.12.11 " The 11th December, 1918.
 " 1799.08.04 " The 4th August, 1799.

Dates written in this way, when filed in decimal order, are filed in chronological order.

SUB-DIVISIONS OF LANGUAGE.

The sign of equality is used to form sub-divisions of the languages in which works may be written, and are very simple, but rarely used.

Thus = 4 *Works written in French.*
 = 7 *Works written in Latin.*

THE SIGN OF RELATION OR ASSOCIATION.

Of all the signs of combination, possibly the most useful is the colon : which is used where there is an implied relation or association between the subjects.

For example :—

621.165 *Steam turbines.*
 621.312.2 *Electrical alternating current generators.*

and thus a paper dealing with a turbo-alternator will be indexed as

621.165 : 621.312.2.

When the index number of the card is made out in this manner, it should be duplicated with the compound decimal number reversed, thus :—

621.312.2 : 621.165.

So that the two cards appearing in their separate and appropriate places in the whole index, the bibliographical notice which they bear will be found, whether it be sought for under 621.165 *Steam turbines*, or 621.312.2 *Alternators*, and the colon shows that a combined machine is described.

It is very important fully to realise the use of the square bracket] in the formation of compound numbers with the colon, for its introduction will entirely change the meaning of such numbers.

Thus we have

016 *Bibliographies.*
 77 *Photography.*
 (05) *Periodical publications,*

and if we write

016 : 77(05)

the compound number would imply

Bibliography of periodicals devoted to Photography,

but the moment we introduce a square bracket to show that (05) *Periodical publications* is applicable to both the related subjects and write the compound number as

016 : 77](05),

we change its meaning to

Periodical bibliographies of Photography,

and thus *Photographic Abstracts*, which is a periodical publication, would be indexed under this number and not the former.

THE USE OF THE HYPHEN IN COMPOUND NUMBERS.

The formation of compound numbers by means of the colon or sign of relation, sometimes leads to unnecessarily long numbers, in which the same principal decimal divisions or groups are repeated.

In consequence, certain *conjoint divisions* have been created, by taking sub-groups of decimal numbers already formed in some parts of the tables and attaching them to groups in other parts.

Thus the sub-groups of 621.1 *Steam Engines*, may belong to the group 536.81, which in the physical sciences corresponds also to the steam engine. Now 621.18 indicates the production of steam in these engines, and if we write 536.81-8, we indicate the same subject in the physical sciences. Again, instead of writing

77.9 : 77.86 *Collection of colour photographs*,

where 77.9 signifies *Collection of Photographs*

and 77.86 *Colour photography*,

we may write

77.9-86.

But to avoid confusion, it is clear that the creation of these conjoint divisions and the use of the hyphen must not be optional, and can be resorted to only in those cases specifically indicated by a special note in the tables.

AUXILIARY SIGNS AND THEIR USE.

In certain cases the sign of addition + or the brace }, the square bracket], and the letters of the Roman Alphabet are used. The letters A-Z are used to complete certain classification numbers, for the purpose of further sub-division, and indicate the initial letters of the names of institutions or publications. Proper names are written in full, when completing the decimal numbers indicating literary works, varieties of animal and vegetable species, or biographies.

Thus 92 *Biography in General* is a number applicable to all Biographies, but a specific biography such as the *Life of Sir Wm. Siemens*, will be indexed as

92 (Siemens, William).

The + sign or the brace serves to unite two or more decimal numbers, when it is necessary to indicate that a work contains two or more unrelated subjects.

Thus	538.74 + 52 241
or	538.74 } 52.241 }

indicates a single work dealing with 538.74 *Compasses* (the magnetic instrument) and 52.241 *Sextants*.

When common sub-division numbers are applicable to both decimal numbers, the writing of the two compound numbers may be shortened by the use of the brace or the square bracket.

Thus, instead of the lengthy index number

35.8(05)(44.36)(R.A.) + 623.4(05)(44.36)(R.A.)

which indicates the *Revue d'artillerie*, a French periodical publication devoted to artillery (administration) and artillery material, the following abbreviated forms may be written :—

35.8 } (05)(44.36)(R.A.)
623.4 }

or 35.8 + 623.4] (05)(44.36)(R.A.).

This use of the square bracket in combination with the plus sign is precisely similar in function to its use in compound numbers formed by the sign of relation, which I have already described.

THE ORDER OF SUCCESSION OF THE SIGNS.

The order of succession of the simple decimal numbers in the process of filing matter is merely that of the decimal numbers, and requires no further explanation ; but when the conventional signs enter compound numbers, it is necessary to give these a definite order of succession.

The point ., the sign of addition +, the brace } and the square bracket], which are purely auxiliary signs, have no succession order, and may be disregarded when filing material.

The succession order which has been assigned to the signs and characters employed in the formation of the classification numbers is as follows :—

(. . .), “ . . . ”, =, :, -, A-Z, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

As an example, the following numbers will be filed in the order shown :—

621.13	<i>The steam locomotive.</i>
621.13(064)	<i>Exhibitions of locomotives.</i>
621.13(47)	<i>Russian locomotives.</i>
621.13“1835”	<i>Locomotives in 1835.</i>
621.13:77.9	<i>Photographs of locomotives.</i>
621.13.0045	<i>Upkeep and supervision of locomotives.</i>
621.13.012	<i>Locomotive wheels.</i>
621.136	<i>Locomotive tenders.</i>
621.136.2	<i>Attachment of tenders to locomotives.</i>
621.138.1	<i>Locomotive depots.</i>

SIGNS FOR OBJECTS OTHER THAN BIBLIOGRAPHICAL DOCUMENTS.

The decimal bibliographical classification was primarily intended for the classification of bibliographical matter, but it may be extended to engravings, pieces of music, coins, pictures, photographic negatives, lantern slides, microscope slides, etc., etc., by choosing a letter to represent the nature of the assembly of objects, and writing it before the decimal number.

Thus

78.71

Violin.

.02

(Special Analytical Sub-division). *Music with accompaniment for the instrument.*

Then

78.71.02 would mean a work on *music for the violin with accompaniment*,

but prefixed with the letter M = pieces of music,
then

M.78.71.02 would mean *Piece of music for the violin with accompaniment*.

Such inventories, entered on cards, can be filed with the whole collection of cards and fall into their natural order with the rest.

Such, then, is the developed decimal system of the Institut International de Bibliographie, and I think you will agree that for simplicity, elasticity, universality and rapidity of manipulation, as well as for low cost in practical application, it stands well in advance of any other scheme.

THE CLASSIFICATION IS BIBLIOGRAPHICAL AND NOT PHILOSOPHICAL.

Few, no doubt, will have sympathy with the order of the classification, but it must be remembered that it is not a philosophical, but solely a bibliographical classification, the object of which is to assign to a single notion a single number, which can be quickly found in a massed collection.

But though the original compilers of the index in 1905, attempted to construct as logical an order as possible, now hopelessly out of date in many instances, this consideration is really of minor importance.

What is of more importance, however, is that any one subject shall not be assigned to more groups than necessary, and perhaps, in some cases, the classification is a little redundant in this respect, but these defects may possibly be remedied in the course of time by the Institut International de Bibliographie.

It might be worth while mentioning that the Optical Society in this country has decided to publish an index to the whole of its Transactions in the form of bibliographical notices indexed by this decimal system, and is at the same time publishing a manual of that part of the decimal tables of the *Manuel du Répertoire Bibliographique Universel* concerned with Optical matters, to serve as a key.

Though many institutions have already adopted the decimal system in this country, this is the first instance in which a British scientific society has decided to apply this great universal classification to its proceedings. I hope that general scientific opinion, after due examination of the achievement, will favour the adoption of this procedure, thereby reinforcing that advance towards centralisation and unity which is slowly taking shape elsewhere. and in other countries, in the indexing of the world's literature by the methods of the Institut International de Bibliographie,

Dr. S. C. BRADFORD (Science Library, S. Kensington) (Communicated): I agree entirely with M. Otlet and Professor Pollard as to the urgent necessity for the co-ordination of bibliographical work. In the Science Library we are making a great effort to obtain, within the next few years, as many as possible of the more important scientific periodicals. But unless the individual articles are indexed in available bibliographies, much valuable work will be overlooked and the labour of its authors wasted.

The unification of abstracting and indexing methods is the first step towards the organisation of a complete index to all published scientific and technical information.

It is difficult at present to amalgamate the work of different bureaux, or even to bring together entries on one subject issued by the same bureau at different times, so that papers already indexed can be found only by looking in a great many places. There is, moreover, an enormous amount of overlapping in the scope of the various indexes, while a number of subjects and many periodicals are not covered.

I think it is of the greatest importance that a single scheme should be adopted for all published bibliographical work, and that all such indexes and abstracts should be issued in a form suitable for cutting up and mounting on cards of standard sizes. References to recorded information could then be brought together into one series, and those relating to a single subject be found immediately in one place.

As Professor Pollard has shown, in the *Classification Décimale* of the Brussels Institute, there exists ready to hand such a general scheme as is needed for the co-ordination of bibliographical work. It has been prepared by collaboration of bibliographical experts, after careful consideration of all known bibliographical systems. There is no other system as good. The scheme is applicable to the indexing, in detail, of information on all branches of knowledge. If used for classifying books on the shelves the smaller subdivisions should be omitted. For indexing literature, some Special Libraries may find the subdivision insufficient. However, a new edition of the Manual is being prepared, in co-operation with experts throughout the World, to include the latest developments of science and technology, and schemes for the more detailed indexing of a special subject may be submitted to the Committee of the Classification for consideration.

The alphabetical subject index is an essential part of the classification. That issued by the Institute applies to all branches of knowledge. For a special subject, it is advisable to cut out the entries relating to that subject and mount them on cards, or if preferred, to paste them into a book. Additional index entries should be added whenever the need arises. Separate indexes have been published for certain subjects. The alphabetical index entry gives the classification number, under which are grouped the cards carrying references to published information on a given subject, so that information on that subject may be found merely by consulting an alphabetical index. I think, therefore, that the International Classification should be adopted universally.

Mr. G. S. DUNCAN, M.A., B.Sc., F.C.I.S. (Society of Glass Technology, Sheffield) (Communicated): In his paper, Prof. Pollard states: "Any one subject shall not be assigned to more groups than necessary." I was glad, therefore, to have the opportunity, kindly afforded by Prof. Pollard at the Conference, of examining the publications of the *Institut International de Bibliographie*, with a view to finding what group or groups had been assigned to the special subject—GLASS.

From the volumes available I extracted the following entries:

535.81	Verre d'Optique, Phys.
542.231	Vases de verre et de cristal, etc.
542.2315	Travail de verre.
571.56	Verre préhistorique.
620.135	Verre, essai.
666.22	Verre d'Optique, Fabric.
677.521	Verre filé, indust.
681.42	Verre d'Optique, emploi.
736.2	Gravure sur verre.
748	Verrerie d'Art.
748.5	Vitraux.

Most references to "Verre" are entered under 666; but the entries just cited show a certain lack of uniformity in allocation. Special attention may be directed to 542.231 (Glass Apparatus) and to 542.2315 (Glass Blowing). It is difficult to understand why these should be entered under Practical Chemistry. Glass apparatus is used not only in Chemistry, but in other branches of science.

It is submitted that practically all entries relating to Glass should be brought together under 666.1. Some such general division as the following might then be adopted:

- 666.11 Raw Materials used in Glass Industry.
- 666.12 Fuels, Furnaces and Refractories used in the Glass Industry.
- 666.13 Manufacture and Properties of Glass.
- 666.14 Moulds, Tools and Machinery used in Glass-Making.
- 666.15 Lamp-worked and Scientific Glass Articles (Glass Blowing).
- 666.16 Stained and Painted Glass.
- 666.17 Decoration of Glass (Bevelling, Cutting, Etching, Silvering, etc.).
- 666.18 History and Literature.
- 666.19 Miscellaneous.

The classification of glasses is a matter of some difficulty. Prof. W. E. S. Turner in his article on "GLASS" in the new edition of Thorpe's "Dictionary of Applied Chemistry" (Vol. 3. London. 1922) states that a simple classification based on composition is not available. He therefore proposes a classification according to use. This affords a basis for the extension of 666.13, as follows:

- 666.131 Lime-Soda Glasses for Common Use (bottles, pressed tumblers, window glass, illuminating glassware).
- 666.132 Lead-containing Glasses (crystal glassware, electric light bulbs).
- 666.133 Chemical Glassware. General Scientific and Heat-resisting Glassware (beakers, flasks, tubing, etc.).
- 666.134 Optical Glass.
- 666.135 Coloured Glasses.

Even this classification is not absolute. For example, electric light bulbs are now extensively made of a glass which contains no lead, and certain makes of illuminating ware are of heat-resisting glass.

It is true that the volumes exhibited by Prof. Pollard were published some years ago—one volume at least in 1905. No doubt many of the defects of the early edition have since been remedied. It seemed worth while, however, to indicate a possible improvement in the treatment of glass, a subject which now has a very extensive literature of its own.

THE SPECIAL LIBRARY MOVEMENT IN AMERICA.

By Miss REBECCA B. RANKIN (Late President, Special Libraries Association of America; Librarian, Municipal Reference Library, New York City).

It is with a peculiar delight and satisfaction that I come to you British special librarians through the written word—and I regret that I may not be at this Conference in person.

My delight is based on the fact that I may hereby be able to repay, in some small measure, our indebtedness to Mr. J. G. Pearce for his visit to the Special Libraries Association Convention at Atlantic City, in 1923. That Convention was our 14th annual convention, and never before had we received into our midst a representative from Great Britain. He entered into our conferences with such zest and with an understanding of our purposes; he brought us a real message from the intelligence bureaus of your country, and we caught our first real glimpse of the special libraries of England. At that time your Chairman, Mr. Pearce, was connected with the Metropolitan-Vickers Electrical Co., Ltd., of Manchester, a sister company of our Westinghouse.

We welcomed your representative and did our best to enthuse him and encourage him to establish a Special Libraries Association in Great Britain—to be affiliated with ours. As President of our Association during that year, I had an opportunity for some discussions with him on the subject, and he assured me that he felt such an Association might profitably be formed.

My satisfaction comes because you now have such an Association of Special Libraries and Information Bureaux. I congratulate you. The President of the Special Libraries Association, Mr. D. N. Handy, wishes me to express the congratulations of the entire Association to you. Your accomplishment is splendid. The urge which we special librarians in America gave Mr. Pearce may have helped in some slight degree in encouraging the establishment of your organization—and in that we are happy to have had a part.

It never occurred to us that in a year's time you Britishers would have a thriving Association. But you have—and we delight to have a sister Association to join with us in our efforts toward a goal of greater service in special libraries.

The story of the development of special libraries in the United States, a history of their growth, is not unlike the development of the movement in England. Undoubtedly, the same demands in both countries created the product, a special library. The initial impetus for the movement came because a group of individuals had the vision to recognize the importance of co-ordinating existing information services, of pooling resources of bureaus of information, and the immediate necessity of meeting certain definite needs which then existed.

Why the need should have been felt a few years earlier in the United States than in England, we cannot say. The Americans being so keen for business, and the growth of business having been so active in the past decade or two, may have been the primary cause. The business man, the scientist, the manufacturer, the public administrator, all seemed to have realized quite abruptly that printed information or experience crystalized in print is a tool—and if he used it in his business, success was apt to attend him.

As this idea grew, the persons in charge of special libraries or bureaus of information also became aware of an opportunity of meeting the demands made upon them by business through co-operation one with another. Therefore, a group of such persons, about fifty in number, organized the Special Libraries Association, in 1909. The Special Libraries Association has fostered the special library idea, and the business men have come to feel the need for such bureaus more and more. Efficiency of the special library has constantly increased, and each successful library brings more cohorts to the cause; consequently, we have hundreds of special libraries in the United States—yes, more than a thousand.

The Special Libraries Association has attempted to list its strength—to know how many special libraries there are in the country. But it is difficult to keep up with the pace. The first edition of the Special Libraries Directory, in 1922, showed a total of 1,300, which included also the special collections in general and public libraries. In the second edition of the Special Libraries Directory, 1925, we list only 975, but this total includes the special libraries only and not special collections. The total of 975 special libraries is a considerably greater number than the purely special libraries shown in the first edition. We know even this latest compilation is not the actual count of all special libraries; the editor has recently accumulated an additional list of fifty new special libraries.

To-day, as I write, a representative of a large manufacturing firm tells me that his company is fully sold on the idea of a special library, and it is being established, due to the fact that they realized they could not produce their own records and general facts of scientific discovery as readily as and when they were needed.

The special library has gone along hand in hand with scientific and industrial research. Just as scientific research has meant so much to industry, through the application of its newly-discovered principles, so the special library, with its emphasis upon fact knowledge, has established a basis for determining the problems of organization, administration and general business policy. The special library's function is bound to be appreciated by the business and professional man, and the growth is constant.

Some of the apparent needs at the time of the establishment of the Special Libraries Association, in 1909, which made it advantageous to have an independent organization, were a

pooling of resources, a system for interchange of information, and an opportunity for exchange of ideas. We feel that the Association during its sixteen years of existence, has accomplished a considerable amount to be proud of. It may not be amiss, at this time, to enumerate and discuss some of the things we have done that have fulfilled the demands made upon us as special libraries.

Knowing that the special library begins where the general library leaves off, attempting to push the boundaries of research and reference farther out and to draw from the unorganized mass of important information the concrete help which its clients needed, a group of special librarians began, in 1913, a co-operative plan, which was called the "Public Affairs Information Service." At first, it was merely a system of exchange, and all the material was typewritten. Forty libraries co-operated. By 1915, the first printed annual index evolved, and it has grown year by year until it is now recognized as the special librarians' index of current publications, and is to us what the "Reader's Guide" is to the general librarian. There was previously nothing in the field now covered by the "Public Affairs Information Service," which is generally accepted as one of the most useful periodical indexes. The idea originated in the Special Libraries Association has been fostered and supported by special librarians, and is now an independent business venture, and financially supports itself.

The official organ, a monthly magazine of the Special Libraries Association, *Special Libraries*, you probably know and use. It is now in its 16th volume, and its contents fully indexed for instant use. The set is looked upon as the best source for bibliographical material in this field. Likewise, by perusing those magazines year by year, you will have an intimate history of our organization. The magazine has served to keep the Association active, to keep the special librarians informed, and has served as a clearing-house of information for us.

Our "Directories" have been mentioned, and they are actually very usable tools, and indispensable to us.

"Information Services Handbook" is another publication, issued in 1924, which was needed. This manual is a compilation of information services, commercial, association, government and periodical services. It's an invaluable tool.

The Exhibits of the Association at various times have been instructive and instrumental in helping in the organization of new special libraries.

The many committees of the Association, during the course of the years, have contributed much to the progress of the special libraries, and they are continuing their helpful work. To merely suggest in what directions these activities have extended, allow me to mention the names of some of the committees, *e.g.*, Methods Committee, Trade Catalogue Committee, Union List of Periodicals Committee, Employment Committee, Training School or Education Committee. Local associations have developed in many

of our metropolitan centres, like New York, Chicago and Philadelphia; and the Association, for the convenience of more intensive study of methods and source material, has sub-divided into Commercial, Financial, Insurance, Newspaper, Civic and Technology groups.

The special libraries supplement the general and public libraries of the country, particularly in the field of research and reference. We are often dependent upon the resources of the public libraries, and make use of them constantly.

The usefulness of the special library would be handicapped without the public library, and we co-operate very closely. The problems of the special library extend beyond those of the public library—meaning they are quite different in character—and for this reason an independent library organization was inevitable and essential. The Special Libraries Association has done much in solving the problems, but there are others in view, and we are constantly extending our ideals and furthering and broadening our service.

Your Association in England has been established for the same reasons that ours in the United States was, and with a well-knit organization such as you are forming in your Standing Committee and an Association behind it, properly planned and financed, you may look forward to a progressive movement in special libraries. An independent association controlling and developing its policies will bring into existence a real co-ordination of all the informational, research and library services. We, on this side of the water, extend you our closest co-operation, and shall hold ourselves in readiness to assist at any time.

In thanking you for this opportunity of representing the Special Libraries Association at this, your Second Conference of the Association of Special Libraries and Information Bureaux, may I suggest that there are avenues open to the two Associations for joint undertakings? A Directory which would open up the specialized resources of two great countries would not be a useless compilation. We in America are ready to join you in any such venture.

We wish to keep in close touch with your Association, and we thank your able and courteous Secretary, Mr. Guy W. Keeling, for his thoughtfulness in extending to us this invitation of representation at your Conference.

**THE 16th ANNUAL CONFERENCE OF THE SPECIAL
LIBRARIES ASSOCIATION, AT SWAMPSCOTT, MASS.
JUNE, 1925.**

By MAJOR T. COULSON, O.B.E. (Special Libraries Association
of America).

The first impression which an English visitor receives of American Conferences is that of the cordiality of his reception. The Special Libraries Association Conference was no exception in this respect, and to a warm and generous expression of welcome was added a lively interest in the development of the Special Libraries movement in this country. It struck me as being somewhat singular that the fine, healthily developed movement in America should display such solicitude for the similar movement in this country; but their interest was not restricted to pious expressions of good wishes. There was a very general expression of a desire to assist this and subsequent conferences in every possible way, and I have no hesitation in saying to you Special Librarians that if you have problems peculiar to the nature of your library, you will find the knowledge and experience of your American colleagues ready to be placed at your disposal.

Perhaps the next most striking impression of the Swampscott Conference was the variety of interests represented. Naturally, where the movement is so firmly planted, one would expect to see a greater variety of libraries represented. In order that the special problems of individual interests might be more adequately discussed, there were certain periods when the Conference would depart from generalities, and go into committee, as it were, in sections. Those interested in Insurance would meet in one room; others representing Newspapers went to another; while the Financial people held their own counsels apart. The effect of this specialisation has undoubtedly resulted in the Special Libraries Association accomplishing much more practical result than the discussion of purely general principles could have achieved, or, what is worse, asking the majority of the Association to discuss principles which directly interest only a minority.

I was a little surprised both at the numbers and the activity of the newspaper representatives. One representative of a provincial journal told me that their library staff numbered seven. This, of course, led to an explanation of their work, and I found that American newspapers have quite clearly realised the value of concentrating their information in one department, and calling it the Library. In England, that same work is still too often spread over many departments, and has numerous names. They do the same work with a good deal of duplication and not a little wasted effort.

Indeed, what I learned from this newspaper section was true throughout all the others. The busy executive officers of firms or

organisations having established libraries to meet specific demands, have found them so valuable that their sphere has been little by little increased. One finds such records as the staff record of a railroad organisation being kept in its library, which is surely a new departure, and the equivalent of our Goad Index usually to be found in the fire department here, is removed to the library in American practice. The general idea is to concentrate all information in one place, to avoid duplication, to reduce personnel, and to have the advantage of trained searchers available at all times.

The cataloguers had also a section of their own, to discuss their problems, and, while speaking of this, I would like to mention the very fine collection of systems of classification which were on exhibition, and which many of the cataloguers spoke of as being exceedingly helpful. In my firm, where we are so frequently consulted upon the most suitable methods of organising a library, the one great stumbling block is the scheme of classification which should be adopted. Everyone engaged in organising a library appears to imagine that he has problems quite peculiar to his own situation, and requires a scheme of classification entirely modelled on his own needs. The collection which the Special Libraries Association has made must be unique. Few were printed, nearly all were typed copies, and reflected the pride of the members in having their systems represented in the collection. The frequency with which these were consulted showed their value.

Throughout the discussions, the fact emerged that not only were American and British problems similar, but the means of meeting them were the same. Systems and methods are very much alike in both countries. Apart from the storage of books, the same general principles of storing other matter was as it is here, in vertical files. Legal sized drawers are used in these files, as they permit two average-sized pamphlets to be filed alongside one another; this effects a material saving of space, since a correspondence sized drawer will not allow two pamphlets to stand side by side.

Methods of indexing and cataloguing are quite similar. The direct alphabetical system of filing was almost universal, as was the card catalogue. Indexing and analytic cataloguing is very generally carried out to a high degree, and the card catalogue has been found the best and most economical means of doing this. I must say from my inspection of a very large number of American card catalogues, that the use of guides, which greatly facilitates reference, is on a more generous scale in this country than in America. On inquiry, I learned that this was not due to any policy, but simply to the fact that the librarian did not have time as a rule to write guides. The best catalogues were those compiled by trained operators hired for the purpose from a library supply firm. The practice of hiring this outside assistance is much more common in America than it is here. I readily understand it is a question of cost; and this, perhaps, is an appropriate moment to introduce an allusion to that problem of absorbing interest to all librarians, the annual budget.

In business firms, the amount of money allocated to the library is usually the same as it is here, that is to say, just as much as the directors think it is worth. The American business man has, as a rule, a higher estimate of the value of his library to his business. In social organisations and institutions, the Americans are far ahead of us in their appreciation of the library's worth, and consequently more generous. Where I found American methods in advance of ours it was generally due to their ability to spend more money. Indeed, where conditions were more nearly approximate in that respect, there was nothing to choose between the two. For instance, I saw nothing superior to Manchester's public business library. But, on the whole, furniture, fittings, equipment and supplies were vastly superior to what is in use here. I was told how one railroad library had received a material addition to its annual allotment. Some objection had been raised to this railroad's privileges and its non-fulfilment of obligations. An immediate reply was necessary, but everyone was of opinion that the necessary facts were not readily available, until the librarian produced them unasked, having intelligently anticipated that they would be required. The library has since received a much greater recognition for this prompt action, and the President of the Corporation has since become an enthusiastic advocate of the library in other concerns in which he is interested.

Now a word upon the personnel. America has so many library schools, librarianship is so well recognised as a profession, that recruiting staffs is a simpler business than it is here. They have left behind the belief that a good filing clerk makes an equally good librarian in charge of an extensive mass of information relating to the activities of a firm or organisation. The demand is now steadily set in the direction of securing competent trained workers and, fortunately, since the recompense offered is adequate, the library schools are usually well attended, and the students who graduate from them are highly trained. Not only are students trained in technique, but also in methods of anticipating requirements; in ensuring that incoming material is promptly directed to the individual likely to be interested in it, without waiting for him to demand it.

If I were asked what is the one factor which contributes more than any other to the popularity of the special library in American business houses and institutions I should say without hesitation—advertising. In this age of publicity you might profitably adopt the slogan, "Be a booster!" Advertise on all occasions the department you are responsible for, make certain that everyone knows what you are doing for other people, and what you can do for each individual. In that way you will not only make the library more effective, but in return for the services you provide you will make friends for your library who will be interested to see it better equipped and better furnished. If you are modest about your work do not be surprised to find other people rating your work as being only on a modest scale. Clamour for recognition and you will get more substantial rewards.

That appears to me to be the means by which a good deal of success has been achieved in America ; upon such foundations is their efficiency constructed and it has so far justified itself that I recommend it for imitation.

I cannot conclude without again emphasising the note already struck in Miss Rankin's paper, that the American Association is deeply interested in your doings ; that they are quite prepared to go beyond the mere expression of goodwill, and are only too anxious to translate the expression into action whenever the opportunity arises.

* * *

Dr. J. D. THOMPSON (Formerly Director of the Legislative Reference Service, U.S. Congress, etc.) : I greatly appreciate the opportunity to say a word or two to this Conference. It is rather difficult to know just what to say in the few minutes to which I must be restricted on account of the remaining items on the programme this morning, but I would like just to emphasise what Major Coulson has said about "boosting." I think he has accurately diagnosed one of the principal causes of the success of the Special Libraries movement in America. It is by a continuous propaganda amongst the public which the special library or information bureau serves that it has been able to establish its place as an absolutely necessary organisation. I notice another important item in Major Coulson's paper, namely, that at the Annual Conferences of the Special Libraries Association, round table conferences are held devoted to special groups of libraries. You will find that in the second paragraph of Major Coulson's paper. The American association has just recently held its 16th Annual Conference, and its organisation is larger, and has developed further, but I believe you have now reached such a size that you can quite well at your next Annual Conference look forward to having special round table gatherings devoted to particular groups of libraries to discuss their common interests, in addition to the general sessions. That feature of the conferences in America has been found to be one of the most helpful.

The particular projects with which I myself have been concerned are the Legislative Reference Service for the United States Congress, and the Research Information Service of the National Research Council, two entirely separate fields, the first political and economic mainly, and the second devoted to science and technology. The first of these I leave till to-morrow morning's discussion, as I see you have Papers on the programme relating to the Special Libraries in politics ; but I should like just now to refer to the work of the Research Information Service of the National Research Council, which has special interest I think for information bureaux supported by Industrial Research Associations, largely represented here. The National Research Council was organised during the war to focus the efforts of the scientific men of America on the scientific and technical problems of the war. Since the Armistice it has gone on to a peace basis, and has been endowed by the Carnegie Corporation. It was organised in subject divisions with a few general service divisions in addition, and one of the latter is the Research Information Service. It is a clearing-house of scientific and technical information for the service of scientific investigators in universities and colleges and research institutes, and in industrial establishments, and for aiding public bodies which may require data regarding the present state of knowledge of any technical matter within the scope of their activities—for instance, information about road-making, and the suitable materials for particular conditions. The Research Information Service does not profess to be able to supply from its own staff all this information, but has developed extensive system of reference to experts in addition to references to printed material. We have added to the bibliographic index a record of personal and institutional sources of information, and I think you will find it a very important addition to the working apparatus of any information bureau to catalogue your available experts as well as your books,—experts who are willing to furnish information on particular topics, particularly those in your own City who can be called up on the telephone for advice ; this information could figure

in the same catalogue under the same subject headings as your references to literature. In Washington we are fortunate in having all the scientific experts in the Government service to call upon in this way. By making a systematic survey of the special topics of research carried on in the different divisions of the Scientific Bureaux of the Government and indexing these by subject, we are frequently able within a few minutes, without searching through a lot of books, to get the exact information that may be wanted in connection with a particular research problem by ringing up the man who knows on the telephone. A further service which we have attempted to render is to furnish information on personnel. An industrial firm has a particular problem; it wants to know who can help it to solve that problem. As we have developed a personnel file of about 15,000 research men in America who are specialists in particular fields, and have coded the records by the Findex system, which classifies them in groups, we are able very quickly to turn out a list of the persons interested in any special subject, and qualified to deal with it. Another feature is a collection of information as to the available funds in the hands of many foundations and societies that make grants in aid of research, enabling us to advise very readily on the possibility of securing funds to support a particular piece of research. Another card catalogue shows where particular scientific instruments, research materials, pure chemicals and so on may be obtained.

An extensive record on cards of existing scientific and technical bibliographies, whether printed in books and journal articles, or unpublished in the possession of their compilers, now includes some 30,000 entries. In the Bulletin Series of the National Research Council we have issued three bibliographies of published bibliographies in geology, physics and chemistry, and other similar guides to scientific literature are in preparation. I hope this rapid sketch will have been sufficient to give you a general idea of the activities of the Research Information Service.

I shall be glad to answer any questions or to talk to anyone privately about this work.

Sir HORACE PLUNKETT: I do feel that this Association will have to take Dr. Thompson's advice about not being too modest! I am not sure that I would go so far as he does and say that the more you advertise yourself, the more you think of yourself, and the more they think of your library. I have noticed in the United States the extraordinary quickness with which you can find what you want in the libraries. I am inclined to think that the decimal system of classification, about which we have heard, has been of immense assistance in this connection.

With regard to the suggestion that experts as well as books should be catalogued, I see very great difficulty in selecting the experts; in the United States the term "Professor" is not only applied to men like my friend Professor Gilbert Murray, but to everybody—chiroprodists, conjurers, and others.

As I have to leave this afternoon, I want to say one word about this Conference as it appeals to me. General libraries have of necessity, so librarians tell me, to take a vast proportion of trash in order to get the good stuff—an immense amount of chaff to get the grain. Special Libraries do not load themselves up with trash. They supply a demonstrated demand, and it seems to me immensely important for us to do all we can to develop this Association; in my small way I shall do my best, and shall ask my own Trustees to join it immediately.

Mr. L. GASTER; I am impressed by Dr. Thompson's remarks concerning the opportunities for experts and possible registration. The question of registration might present difficulties in this country, as it is not thought professional for consulting experts to be advertised in this manner. Such experts are few in number, and command high fees for their special services, and it would not be found easy to classify them in any Directory compiled for Special Libraries or Information Bureaux. The matter would require careful handling and possibly some other means, more acceptable to the profession, might have to be devised.

Mrs. W. L. COURTNEY (Carnegie United Kingdom Trust): I think the experts should be invited to send their records, but my experience in connection with research for purposes of the "Encyclopedia Britannica" is that the only persons you can never find are the learned and the scientific.

Dr. J. D. THOMPSON : May I explain what I meant by my reference to experts ? It does not seem to have been quite understood. It was only for the information of the Manager of the Information Bureau that I advocated this cataloguing of experts, so that he might know whom he could call up on the telephone when he had a request for information on a special topic. I did not propose that they should be advertised in public in any shape or manner, and we do not do so in our Information Service ; but being located in Washington and having a large number of experts in the Government Service, by keeping a record of their specialities we are able very rapidly to bring them into our service without pay, because they are public officials.

Dr. O. KENTISH WRIGHT (Ministry of Health) : I think that there is a function of this Association which should be kept very much to the fore in the early days of its existence, and that is to enable Special Libraries and Information Bureaux to make use of each other more freely than is done at present. I have frequently found difficulty in ascertaining where information is to be had, and I have come here in the hope that that difficulty will be solved to a considerable extent by this Association.

SPECIAL LIBRARIES—THE PROBLEM OF CO-OPERATION WITH THE PUBLIC SERVICE.

By THOMAS GORRIE (Chairman of the Library Committee of
The Carnegie United Kingdom Trust).

It is with pleasure that I have accepted the invitation of your Committee to attend this important Conference, and it is with no less pleasure that I respond to their request that I should indicate to the delegates in what way the Carnegie United Kingdom Trustees whom, as Convener of their Library Committee, I have the honour of representing, can play a useful part in furthering your object of facilitating the use and co-ordination of all sources of information for scientific, technical, commercial and public purposes.

At the 1924 Conference, Colonel Mitchell, Secretary of the Trust, told you that in the sphere of library provision the Trustees have taken as their general function the task of helping to make the manifold sources of knowledge accessible to the widest possible public. In so speaking, he had in view the fact that the beneficiaries of the Trust are the masses of the people of Great Britain and Ireland. We do not expect the masses of the people to become marine biologists, anthropologists or experts in economics, but we have, nevertheless, assisted in the linking up of libraries relating to these very subjects with the Central Library for Students, in the belief that the giving of facilities for research to all potential experts is in accordance with the terms of our Trust, and that there are in the application of the knowledge so made available real, though incalculable, possibilities of beneficially affecting the lives of the masses.

In the matter of Specialist Libraries, the Trustees, in their endeavour to carry out the task to which they have committed themselves, have proceeded upon the plan of building up one National Loan Collection as a reservoir of rare and expensive books which County Libraries and smaller Municipal Libraries cannot afford to buy for a comparatively small number of borrowers. The Trustees attach the greatest importance to the Central Library for Students, as an indispensable part of a complete library service.

Obviously, the Central Library by itself cannot be a complete reservoir of the kind indicated. Considerations of space and also of the cost of staff and book purchase would render this practically impossible, even if it were desirable. But we do not look upon it as by any means desirable, as we have come to the definite conclusion that the solution of the problem lies in the close linking up of approved Specialist Libraries with the Central Library for Students, as "outliers" to that Library. Since 1920, it has been the policy of the Trustees to make grants to certain institutional libraries if they are prepared to become outliers to the Central Library, *i.e.*, if they are prepared to lend such of their books and

periodicals as are not exceptionally rare or irreplaceable to borrowers applying through the Central Library. The loans then become loans not to the individual borrower, but to the Central Library, which becomes responsible for the care and return of the books lent.

The Trustees have been gratified to find that the principle of such an arrangement has met with the approval of the various bodies to whom it has been submitted, and by the end of last month the following Libraries have accepted financial aid from the Trustees on the condition I have indicated: The College of Nursing, The Royal Aeronautical Society, The Scottish Marine Biological Society, The Rowett Research Institute, The Solon Ceramic Library, The Royal Scottish Society of Arts, The King's College for Women, The Royal Anthropological Institute, The British Institute of International Affairs and the League of Nations Union. In the case of the British Optical Society and the London School of Economics, grants have been promised, but the concluding of the terms of acceptance is still the subject of negotiation.

It is too early to form definite conclusions as to how far the development of the Central Library system will be facilitated by this sort of linking up, and what libraries may still be included. The Trustees are bound to examine every proposal from the point of view of the value of the library itself, and the importance of its subject, actual and potential, in relation to the general well-being. Much remains to be done in the direction of compiling catalogues, not only of the various outliers, but of the Central Library itself. The public at large is by no means yet perfectly acquainted with its new resources, and not all Library Committees show enthusiasm in making known to their own local public the important service which is available. It is, however, a step forward that such collections should be at the disposal of the public, through the Central Library for Students' system, and no doubt the difficulty of bringing this service to the knowledge not only of the local Library Authorities, but of isolated students, will in time be overcome.

With a more complete organisation and a satisfactory cataloguing system, the linking up with the Central Library of these outlier libraries, will have obvious and great advantages. The Central Library will be spared the expense of buying books which are already in the outlier libraries. Many books and periodicals which are otherwise not obtainable will become available to students. The problem of shelf room will be lightened, and above all, the special knowledge of the experts in charge of the Specialist Libraries will become available to the Central Library staff.

A question of some difficulty may arise, in future, as to how long the outlier libraries will feel justified in continuing the service on the basis of one Trust Grant of fixed amount, in the event of their finding that the wider knowledge of the possibility

of borrowing results in a serious strain upon the resources of the library. The funds at the disposal of the Trustees, large as they are, are small in relation to the number of the beneficiaries, and consequently, the Trustees do not mortgage their future freedom by committing themselves to maintenance grants, but it seems quite possible that, should such a financial question arise, the Central Library may be instrumental in making such arrangements with the public libraries as will meet the difficulty. In embarking upon the outlier library policy, and thus increasing the scope of the Central Library service, the Trustees have some confidence that the appreciation on the part of the public library authorities will result in the funds necessary for maintenance being provided.

In conclusion, I desire to add that the Carnegie Trustees attach the utmost importance to the strengthening of the Central Library service in the manner indicated, and that their interest in the problem will not be limited to the setting up of a satisfactory organisation. No doubt, the machinery is important, but the spirit in which it is worked is more important still.

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THE CHAIRMAN: We are indebted to Mr. Gorrie for his statement. Librarianship generally in this country is indebted not only for monetary aid, but for constant stimulus and encouragement, to the Carnegie United Kingdom Trust. The Trust has, for instance, forged a most valuable link between the Specialised and the Public Libraries in the Central Library for Students.

Miss G. SEARIGHT (Librarian, League of Nations Union): The League of Nations Union is most grateful to the Carnegie United Kingdom Trustees for the help and encouragement which they have given to our library, which we hope to make a comprehensive one on the activities of the League of Nations. We only lend books to our members, but we should be only too glad at any time to answer any enquiries, and everyone is welcome to use the library for purposes of reference. We get all the literature published by the League immediately; these documents are always available for reference, and in many cases for loan.

Major W. E. SIMNETT: With regard to the "outlier" scheme; there are special libraries which are possibly not in need of assistance from the Trust—I am thinking of the engineering field, where vast collections of technical literature are available. There is the possibility of enlisting the assistance of the people in charge of those libraries and of utilising their special knowledge through the medium of the Central Library, even if you do not get the free use of their collections. The use of these special libraries is often restricted; it is not possible in some instances for books to be lent by them. But it is always possible to refer to them, and in modified ways you can get access to the knowledge which they contain. I am quite sure in many cases, where the library does not come under the outlier scheme, that the librarian would be quite willing to place his special knowledge at the disposal of those members of the public who may make inquiries through the Central Library.

Mr. T. GORRIE: There is, of course, nothing whatever to debar the Central Library for Students from co-operating in the fullest possible way with special libraries, whether these are in receipt of grants from the Carnegie Trust or not; I hope that Major Simnett's suggestion will find its way to the Governing Body of the Central Library for Students, and that they may see their way to give effect to it. Those responsible for special libraries cannot do too much in the way of making them known amongst the public at large.

Dr. J. C. WITHERS (British Cotton Industry Research Association, Manchester, etc.): We all know only too well that there are papers of out-

standing importance which are scarcely accessible now, because they were published years ago in rather obscure journals, I think little could be done of greater benefit to science than to reprint such papers. Let me be quite specific. The first work on the oxidation of cellulose was published in 1882 in the Journal of an Industrial Society in Rouen. Nothing better than that has been done up till the end of last year—in fact, that whole branch of knowledge has been muddled ever since the pioneer work was done. I doubt if there are more than six copies of the original paper in England; it would be of inestimable value to chemists (especially in that field) if that obscure paper of 130 pages were reprinted. Now, who can do that? I do not suppose the parent Society could finance it. Could the Carnegie Trustees make a grant? Could the National Research Council of America help? I am quite sure that Dr. Thompson knows, through his excellent work in collecting bibliographies, of numerous examples of outstanding papers which are now to all intents and purposes lost to the world. Are the Committee on Intellectual Co-operation of the League of Nations and the International Institute at Brussels, bodies to which we might refer such a piece of work?

Mr. L. STANLEY JAST: There is one service which I believe the Carnegie Trust has financed in America, but where practically nothing has been done in England for lack of funds. If the Central Library, or the special libraries themselves could publish selected lists of the most important books in their several fields, that would be doing an immensely valuable service as far as the general reader is concerned. Every librarian finds it more and more difficult to select those outstanding books, especially in technical and scientific fields, which any library ought to have if it is going to be of any value to the reading student. There is an enormous, an immense need, for work of that kind; to be effective these lists must be printed and be available to individuals and libraries alike. The American Library Association does issue lists of this sort. I rather fancy that that section of the American Library Association is endowed; but at all events, they began upon money provided by Mr. Carnegie. Nothing of the sort has, however, been done in this country, and it is an urgent general need.

Major W. E. SIMNETT: May I point out that the British Science Guild has published a list of scientific works in many fields, and that it is quite willing to proceed with the expansion of that work given a little more co-operation, and especially more funds.

M. P. OTLET: At the Institute at Brussels we utilise the film, not for moving, but for fixed pictures for the purpose of reproducing books very cheaply and in very condensed form.* The cost of the first negative is only 50 centimes (about 1d.), and of further copies only 15 centimes (about $\frac{1}{4}$ d.). By this means we can reproduce books in photographic form, and at a cost of about three shillings get a book not much more than a cubic inch in size, but representing 300 printed pages.

Dr. R. S. HUTTON: I should like to be allowed to say on behalf of the Standing Committee how very much we appreciate the presence of Mr. Gorrie amongst us to-day. We were enormously helped and stimulated by Col. Mitchell's attendance at our Conference last year, and I am sure you will be glad to feel that the work has been greatly helped by the splendid confidence which the Carnegie Trust has put in us.

Mr. R. BORLASE MATTHEWS: It has often occurred to me that we want a classification of special libraries. There are special libraries which when you come to examine them, are found to cover much ground outside their particular subject; if a library which already specialised was encouraged to develop that particular section of the classification, overlapping with other libraries could be avoided. That library would become known as the most specialised of special libraries in that section of the classification.

Dr. E. E. LOWE (Leicester Public Libraries, &c.): This "outlier" idea contains the germ of true national co-operation and I should like to see it tremendously extended. In Leicester—and many of my colleagues I know have had the same experience—I have had the mortification on more than one occasion of being unable to supply a research worker with the

* *La Photoscope*: full particulars obtainable from La Société Anonyme, "La Photoscopie," (brevets Goldschmidt), Institut International de Bibliographie, Palais Mondial, Bruxelles.—Ed.

particular literature or book which he required, although I know perfectly well that it was contained within the library of say the Geological Society or the Physical Society, or some other learned Society. It was decidedly mortifying not to be able to borrow it. I would like to ask Mr. Gorrie whether the grants to various libraries were grants made as a result of an application for assistance by those libraries, or whether the Trustees themselves took the initiative by saying: "If you will become an outlier library and take part in this movement, we will give you a grant." If the latter is not the case, I would like to suggest that the Trustees might consider the possibility of asking the libraries of the learned Societies and other bodies whether, and under what conditions, they are willing to join in such a scheme. Many of us are already gladly subscribing to the Central Library for Students; many of us would pay an additional subscription if we could have such facilities as those I have suggested.

Professor A. F. C. POLLARD (Imperial College of Science and Technology): I do not want to heckle Mr. Gorrie too much with regard to funds, but I would like to bring to his notice the fact that one of the chief difficulties which stands in the way of the universal use of the decimal classification is that the Manual is out of print. M. Otlet tells me that if he could get subscriptions towards say 300 volumes, the whole work could be reprinted; I would very much like to ask Mr. Gorrie if his Library Committee could consider helping the Institut International de Bibliographie in this matter.

Mrs. FLOWER ("Christian Science Monitor"): I would just like to mention as a possible means of making special libraries better known to the general public and to each other, that I represent a newspaper which tries to specialise in that direction. It is always glad to publish articles on libraries, descriptive of their work or the chief ideas which they wish the world to know; it would welcome articles sent in by those in charge of special libraries; this could be done, perhaps, through this growing Association. The "Christian Science Monitor" goes to every country in the World; and has many thousands of readers who are looking out for this sort of thing.

Mr. T. GORRIE: A number of specific suggestions have been made and questions asked, directed not only to the Carnegie Trustees, but to other similar bodies. In so far as they are addressed to the Carnegie Trust, I must ask the members of the Conference to excuse me for exercising a certain amount of caution. I have colleagues to consult, and all I can say is that applications received from the important bodies represented at this Conference will receive the most respectful consideration.

I was asked whether the outlier libraries have approached the Trustees, or whether the Trustees have approached the outlier libraries. I think I am right in saying that in every case where a grant has been made, the application has come from the body in control of the library. I am a little afraid that in some cases a suggestion coming from the Trustees might not be altogether enthusiastically received, but I shall see to it that the matter is considered by the Trustees. I should like to express my most cordial appreciation of the very kind things that Dr. Hutton said in regard to the work that the Trustees are doing. The Trustees are certainly greatly interested in the whole problem of special libraries.

THIRD SESSION - - - Saturday afternoon,
September 26, 1925.

Chairman:

Brig.-General MAGNUS MOWAT, C.B.E., M.Inst.C.E.,
M.I.Mech.E.

**CO-ORDINATION OF TECHNICAL INTELLIGENCE
IN ENGINEERING.**

By Major W. E. SIMNETT, M.B.E., Associate Inst.C.E.

In a paper read before the Library Association in 1920, and published in the *Record* for May of that year, I described the provision of special libraries in Engineering, and discussed certain questions relating to the organisation of a technical information service. The establishment of this Association has now brought into being an expert body whose special field is the consideration of technical questions of this nature, and I have therefore had pleasure in acceding to the request of the Committee for a Note on the organisation of technical intelligence with special reference to Engineering science.

My interest in this question dates far back to the days when I first joined the staff of the Institution of Civil Engineers. As early as 1901, I discussed with Dr. Forster Morley, who was then directing the first issue of the *International Catalogue of Scientific Literature*, the possibilities of organising a similar index of technical literature, and it was hoped after a few years' experience to extend that organisation to include Engineering science, applied chemistry, and agriculture. Nothing came of this, however, and as you know, the *International Catalogue* itself did not survive the War.

At that time and subsequently, I was also interested in the possibilities of co-ordinating the special libraries serving the wide and complex field of mechanical science. Chief among these was the Library of the Institution of Civil Engineers, one of the finest technical collections in the world, covering the whole field of Engineering and related sciences, containing over 50,000 volumes and some 20,000 pamphlets. There were also the libraries of the Institution of Mechanical Engineers, the Institution of Electrical Engineers, the Institution of Naval Architects, the Iron and Steel Institute, and many smaller collections, both in London and in the provinces. Between these various collections there is absolutely no co-operation whatever. They function with varying degrees of efficiency, and in completely watertight compartments. Each serves only its own members, and each endeavours with more or less success to cover its own special field and as much as it can of neighbouring territory, but without any definite plan, while the Institution of Civil Engineers endeavours to cover the whole range of Engineering science.

The inevitable result of this unrelated effort, coupled, of course, with restricted funds, is that while there is considerable overlapping and duplication, there are also not a few serious *lacunae* in various departments of knowledge. Each library has its own catalogue, more or less complete, and its own, usually elementary, system of classification. There is no means of knowing what is in any other library, or whether and to what extent recourse should be had to the Library of the Patent Office or other similar collections, or, in the last resource, to the British Museum.

Taking the Civil Engineers' library as an example, such a collection is made up of different elements or classes of literature. There are first, although not in order of importance, the separate treaties, text-books, and works of reference which to the library or lay mind constitute a library. In a scientific or technical collection, these often form much the smaller part of the whole. In addition, there are the Parliamentary, State and Official publications of various countries, reports of all kinds of corporations, commissions and other bodies, pamphlets, catalogues, pocket-books, etc., and last, but on the whole most important, that vast mass of current literature which is contained in the transactions and proceedings of scientific and technical societies and in the technical and trade journals published throughout the world. Observe, however, the influence of literary tradition, the tyranny of the book, upon these technical collections, which, properly speaking, are not libraries in the ordinary sense at all, but "tool stores." The bound book is still regarded as the library unit, and its title page as the basis of the catalogue. The Civil Engineers' Library is housed in magnificent, but from the practical working point of view, not very suitable premises; it is press-marked on the obsolete collegiate plan, and is roughly classified, so far as physical limitations permit, partly by subject and partly according to form and size of publication. Its catalogue is comprised in a series of separate author and subject indexes, compiled and printed at intervals of years, only the current additions being maintained on cards. There is, however, the less objection to this in that it has been said that the larger part of Engineering information ten years old is already obsolete, the essence of permanent value having been precipitated and preserved in current text-books and compendia. This, it is true, would seem to be an argument for decennial weeding-out, a controversial subject into which we need not enter here. The important point is that the greater and, perhaps, more valuable portion of this library, the contents of periodical literature (using that term in its widest sense), is not indexed at all.

Impressed with the waste involved in this lack of co-ordination and failure to utilise fully existing resources, I drafted for future use, should opportunity offer, some proposals for co-operation between the principal engineering societies and for the co-ordination of engineering information generally, but no favourable opportunity occurred up to the outbreak of the War, and in the meantime I had the mixed satisfaction of seeing a similar, but more drastic scheme carried into effect in the United States.

There, aided by the munificence of the late Mr. Carnegie, the four national Engineering bodies, together with a number of smaller societies, have been united under one roof in the United Engineering Societies' Building. The individual societies' libraries have been amalgamated, unnecessary duplication eliminated, gaps filled up, and under the direction of Dr. Harrison W. Craver, they are being developed as an organic whole. Accessions are published in detail in the monthly journals of the associated societies, and a cumulative card-index is maintained in the library. In addition to this, the library acts as a Central Information Office, an expert staff being retained to answer all requests for information, make searches, prepare bibliographies, furnish references and copies or photo-prints of articles, drawings, etc., at charges covering the cost of time and material. The organisation has also acquired *The Engineering Index*, and this is now published monthly in *Mechanical Engineering*, together with an "Engineering Survey," consisting of selected abstracts, principally of mechanical interest of articles in other transactions and periodicals. The monthly indexes are later collected and classified in one alphabetical sequence and published in an annual volume.

Nothing has been done in this country, however, towards co-operation in any form between the various engineering bodies, save in a very limited sense in the recent formation of the Engineering Joint Council; and no consideration has been given to the international aspect of engineering organisation and technical intelligence.

Before the War, various engineering societies were in the habit of including abstracts of foreign papers and articles in their proceedings, among others, the Institution of Civil Engineers, the Institution of Electrical Engineers, and the Iron and Steel Institute. The principal defect of such abstracts, apart from their paucity and the fact that each society catered only for its own membership, was the long delay in their appearance after the publication of the original, rendering them of historical rather than practical interest, as completing the record of technical achievement presented in the respective societies' transactions. Absence of co-ordination naturally led to overlapping and duplication in some fields, whilst others suffered from inadequate treatment or complete neglect, especially, for example, the important fields of Mechanical Engineering, Shipbuilding and Marine Engineering. The ground, however, was only very superficially covered, as may be judged from the fact that the foreign abstracts of the Institution of Civil Engineers, the only series that professed to embrace all branches of Engineering, totalled about 500 in the course of the year. All these abstracts suffered during the War, and those of the Civil Engineers, which had previously been reduced to little more than index-entries, were discontinued for a time. They have since been re-issued as a quarterly pamphlet.

In 1917, it was my privilege to establish in the War Office a Technical Intelligence Service, which undertook the co-ordination

of official and external sources of Engineering information, and the prosecution of enquiry and research, primarily for military purposes, not only on behalf of technical branches of the Army, but also at request for other Government Departments. The work of this Service, which was exclusively concerned with technical problems arising during the War, and later, with similar questions in connection with the Peace Conference, need not be more specifically referred to here; but if two examples taken at random may serve, I may instance an exhaustive study of Train Ferries, in preparation for their adoption by the War Department, and various technical studies and reports in connection with the Ports, Waterways and Railways Clauses of the Peace Treaty.

Early in 1918, in view of the serious absence of up-to-date information on the part of manufacturers and engineers, both military and civil, as to technical progress abroad, it was decided to undertake the systematic collection of such information, especially from the then enemy sources, and to publish a periodical summary or review of foreign technical literature. Accordingly, an arrangement was concluded between the Technical Intelligence Service and the Section of the General Staff already charged with the scrutiny of the foreign press, whereby the former undertook, with the co-operation of practical engineers, the production of the *Technical Review of the Foreign Press*. In this work, I was enabled to avail myself of the services of, amongst others, many of the abstracting staff of the Institution of Civil Engineers.

The *Technical Review* was distributed throughout the Army, Navy and Air Force technical branches (the Aeronautics Section was contributed by the Intelligence Branch of the Air Force); it circulated amongst Munitions and other Government Departments, and was later placed on sale to engineers and manufacturers throughout the kingdom. The *Review* abstracted and indexed a very wide range of technical publications (transactions, journals, etc.) in all the principal countries, including the United States, and at a later date, the principal English sources were also included. Besides the abstracts, the Service undertook to supply copies or translations of the originals, and to furnish further information upon any subject where required, and if in any way obtainable. The facilities thus afforded were greatly appreciated, both by official departments and by manufacturers and engineers throughout the country, and after the Armistice, it received the significant compliment of prompt imitation in Germany, although the *Technische Zeitschriftenschau* gave little more information than was contained in the Index Section of the *Review* alone. During the 18 months of its official existence, as a War Office Service, considerably over 6,000 abstracts were published, apart from the very numerous index-entries, and I think it may fairly claim to have rendered valuable service during an exceptionally difficult period. An account of the origin and scope of the Service was given in the Editorial Statement prefixed to the last official issue, which appeared on the 19th August, 1919.

On the morrow of the Armistice, a draft scheme had been issued from the War Office, inviting the co-operation of public departments and technical societies in the continuance of this work after its cessation as a War Service. After giving an account of the organisation and work of the Service, the memorandum suggested that it should be carried on either as a Technical Intelligence branch of the Board of Trade or as an independent organisation, somewhat on the lines of the British Engineering Standards Association, with the support of interested Government Departments, and of technical institutions and manufacturers' associations. A copy of the War Office memorandum is appended to my paper before the Library Association previously quoted.

Although sympathetic consideration was given to the scheme by the Board of Trade, and also by such bodies as the Federation of British Industries and the British Engineers' Association, no definite result ensued, and when the time came to wind up the official service, the *Technical Review* was carried on for some time upon an independent basis; but it was not found possible to continue such a service indefinitely without some measure of official or corporate support, and eventually, although admitted to be doing valuable work, the publication of the *Review* ceased and the organisation was disbanded.

In the field of Engineering science, we are still without any form of co-operation between Engineering institutions or associations, either for purely library purposes, or with the larger object of organising the collection and dissemination of Technical Information. I venture to think that this is a matter which should receive the earnest attention of the Engineering Joint Council, as representing the principal engineering institutions, of the Department of Scientific and Industrial Research, and possibly also of research associations in engineering and of manufacturing engineers' associations.

I suggest that a representative body should be formed on the lines of the British Engineering Standards Association, including Government representatives, and that the whole field of Engineering research be mapped out among the supporting institutions, each being made responsible for its own particular section. As regards technical indexing, I think that some principles of selection are absolutely necessary, in view not only of the large amount of duplication, but also of the rapid obsolescence of much of the material. The ideal solution appears to me to consist in a combination of brief abstracts and concise index-entries; but it is essential that the material so gathered together should be made available promptly while it is still fresh, and, therefore, publication should take place in the form of a journal, probably classified in sections.

Close co-operation should be instituted between the principal Engineering libraries, both in London and the provinces; a common card catalogue should be formed, starting only with current literature, and copies deposited, together with the separate printed catalogues of the older books, in the principal libraries; a combined accessions list should be issued in the monthly journals,

indicating where each entry is to be found, and the province of each library be limited, especially in regard to the acquisition and filing of periodical publications, which would correspond naturally with the territory which each society was covering in the abstracting and indexing service, certain general publications being filed by all.

Possibly the activities of such a Service could best be focussed in a Central Information Office, which would be in close touch with the principal societies and their libraries, and would receive and deal with all enquiries for information in co-operation with the various libraries, indexing all information supplied, and gradually building up an efficient Information Service, while co-ordinating the abstracting work and undertaking the publication and distribution of the *Review*. Following the precedent of the B.E.S.A., the financial basis would be sought in contributions from the supporting institutions and associations aided by grants from the Research Department, in return for which, the Service and the Journal would be available to Government Departments and in proportionate editions to the supporting bodies. Some revenue would come from other sources, *i.e.*, from firms and individuals to or for whom information was supplied or searches or other services undertaken, and possibly from advertisements. The possibilities of affiliation or reciprocal arrangements with similar organisations in other countries might also be explored. But whatever may be thought of any specific proposals, I venture to submit that the matter is one that should form the subject of responsible and careful enquiry, with a view to at least some measure of joint action in the Engineering field. This is a matter which would seem to come within the purview of the Engineering Joint Council.

Looked at from a larger point of view, the advancement of technical knowledge is a matter of national importance ; we see its implications in such questions as the scientific utilisation of our coal resources. It is, or should be, the concern of our public departments, our scientific and technical societies, our manufacturing industry, and the community generally. The basis of such advancement must be the efficient utilisation of all our resources for research, and for this reason, the subject of Technical Intelligence is one that merits the closest attention, not only of this Association, but of all who are interested in scientific and industrial progress.

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THE CHAIRMAN : If the author in his remarks about the co-ordination of the libraries had introduced the word " formal " he would, in my opinion, have been correct. There is no " formal " co-operation between them, but I submit that there is a very friendly relationship existent, and, as responsible for one of them, would say that our librarian is in communication day by day with the librarians at the other institutions ; at our end we are very often able to help others and get them information elsewhere, if we have not got it ourselves. I could give many instances, if time permitted, where co-operation is carried on in this friendly spirit without any pressure from headquarters.

The author referred to the practice prevailing in America ; I had the opportunity of discussing this matter with a number of distinguished American

engineers when they were over here a few years ago. The magnificent library in New York, which houses the whole of the Engineering libraries, was obtained as a gift from Mr. Andrew Carnegie; and after it had been established, they got off scot free as far as rates are concerned. Now where would we be in this country if we had that privilege?

The second part of the paper refers to the question of abstracts. Major Simnett has alluded to the Engineering Joint Council, which has been set up recently by four of the Institutions. It fell to my lot last year to be Secretary of that body; and I can tell you that earnest consideration has been given to this question of synchronising some of these productions, more particularly the excellent publication "Science Abstracts," which is edited by Mr. Cooper on behalf of the Institution of Electrical Engineers, and the "Engineering Abstracts" of the Institution of Civil Engineers (which deal, I may say, only with foreign matter, though I am sorry to say that no scheme has yet been formulated whereby the two can be brought together. I mention this instance in order to assure you that the matter is one which has not been lost sight of; though the problem is a difficult one, it does not follow that it is without solution.

One other point—the author refers to the "Engineering Index" as having been acquired by the Engineering Societies' Library. This Index, however, is owned and carried on by the American Society of Mechanical Engineers, with whom we on this side of the Atlantic are in such constant and friendly touch.

Mr. L. GASTER, F.J.I. (Scientific and Technical Circle of the Institute of Journalists, etc.): As one who has been in America and seen that famous engineering building, I can say confidently that a great deal of overlapping has been avoided by having the several institutions in the same building. It is very important that the learned societies should put jealousy apart and co-ordinate their work. I speak feelingly in the matter, because some subjects which might with great convenience have been included in Major Simnett's suggestion are entirely left out.

Mr. F. DONKER DUYVIS (Nederlandsch Instituut voor Documentatie en Registratuur, etc.) (Contributed): To the valuable information Major Simnett has given in his paper, I should like to add some observations from an international point of view. There are published in various countries excellent technical abstracting journals; much of the work of these journals is, however, duplicated and all tend to be incomplete. In co-operation with the International Institute of Bibliography, the office at Deventer of the Nederlandsch Instituut voor Documentatie en Registratuur has begun to issue a monthly list of technical literature, systematically classified; these lists refer not only to the original technical papers, but also to the abstracts published in abstracting periodicals such as "Technische Zeitschriftenschau," "Mechanical Engineering" and the like. The Technical Index* gives about 1,200–1,300 titles a month, or say 15,000 titles a year. The work is not self-supporting and we shall only be able to increase this number if our funds permit. It is, however, unlikely in any case that we shall exceed a total of 20,000–25,000 titles a year.

Mr. A. L. HETHERINGTON (Department of Scientific and Industrial Research): There is some danger, I think, in a central organisation, both on the score of capital cost to which the Chairman has drawn attention, and on the score of staffing. It would need a very considerable staff, probably highly trained scientifically, to be able to cope in useful fashion with the abstracting. After all, a central organisation will avail little unless it provides material which will be used and not merely stored.

I am naturally concerned at the Department with the work of industrial research associations. Each one of these research associations has an information bureau of its own, which forms one of their most valuable features. It gets into touch with firms in the industry in the most rapid manner possible; it is an active rather than a passive organisation, putting in front of the firms the information that they ought to want, even if they do not want it. It gives them extracts from current literature in this country and elsewhere, as well as reports of actual research work on which they are engaged. In the Department we have our own Information Bureau; I was naturally interested to hear what Dr. Thompson had to say about a similar organisation

* Members of A.S.L.I.B. are to be entitled to a reduction of about 20 per cent. on the subscription price of the "Technical Index."—Ed.

in America. We are working on the lines of a clearing-house, and have never attempted to set up a great and costly organisation with a large staff to cover the whole range of science. We try by exchange of information to keep in touch with research developments in all parts of the world, but especially here. We see not only confidential reports which cannot be disseminated, but also a number of non-confidential reports of research work. We are continually drawing the attention of the research associations to work that has come within our ken, but which might not have come within theirs. What I want to stress is that a central organisation, if it does not get at the people in industry who really want it, is not serving any useful purpose.

Major W. E. SIMNETT: May I just say that what I meant by a central organisation was simply a central co-ordinating office. The staffs to which Mr. Hetherington alluded already exist. The staff producing the engineering abstracts of the Institution of Civil Engineers being all experts in their particular branches of engineering; other institutions are similarly staffed. My suggestion was merely that their work should be co-ordinated and overlapping eliminated. The principle on which you work at the Research Department of acting as a channel and distributor for information which is largely prepared elsewhere, is the principle which I wish to apply to the whole of the field of Engineering. It is a matter more of administration and goodwill and organisation than of any serious capital cost; but it does mean bringing all the agencies, including, I hope, the Governmental agencies, together.

Mr. H. ROTTENBURG, M.A. (Engineering Laboratory, Cambridge University): I should like to suggest that we, through Sir Richard Gregory, who is a Member of the Committee of this Association, approach all the publishers of technical papers to try and secure the adoption of a uniform scheme whereby each technical article should begin or end with an abstract. Some papers do it already. The decimal classification of that article might be given; and it might be stated what previous articles are washed out by this article.

A paper called the "American Machinist" for a time published an extremely useful book, which had on one page a series of abstracts (which were really descriptions of new machinery), printed, moreover, in such a form that they could be cut out and pasted on to cards. If our technical papers printed abstracts on one side only (with say advertisements on the other side) we should be commencing to-day to build up the very thing we are clamouring should have been done in the past. If the work were distributed it would be quite feasible; the value of technical literature would be increased if you could turn up a page and run through the abstracts. I suggest that in that way we should be building up a most useful thing for technical literature in this country. Last year I presented a short paper on the method of printing abstracts by means of apparatus like the Addressograph, where, instead of setting up type, the matter is embossed on a zinc plate. I am in no way connected with the firm, but the method struck me as an admirable way of saving time in making up indexes.

Dr. R. S. HUTTON: With your permission I should like to make a few general remarks in explanation of the position of the Standing Committee of the Association in having put forward this matter of the co-ordination of abstracting services as one of the directions where it hopes to be able to be of some assistance. It may seem to you, Sir, rather impertinent for a body of this sort to think that it could in any way take a part in helping such eminent Institutions as your own and the Civil Engineers. I am sure we welcome this paper of Major Simnett's, dealing as it does with the field of Engineering, as coming well within the matters which we think can usefully be discussed at conferences of this sort. It seemed to me, in listening to his remarks and in remembering the address given to us by Professor Gilbert Murray, that possibly it is only in a forum of this sort that certain aspects of such a subject can usefully be discussed. We heard this morning of the excellent progress which has been made in the field of Physics and Physical Chemistry; that surely must throw some light on this other sphere of activity, namely, Engineering science; as far as I can see, looking at it quite generally, all these attempts at co-ordination have to go through two or three stages. We first of all need the very close co-operation of allied institutions in a particular country; we then need international connections; and lastly, we need to find ways and means of combining the whole thing into some

more or less complete abstracting service, bearing in mind the very important point which Mr. Hetherington has raised, that it is obviously no good producing a publication of that sort except in some form in which it can be usefully applied and generally consulted and appreciated.

Mr. Rottenburg has talked to us on the most fascinating subject of the simplification of abstracting services by persuading authors themselves to prepare their abstracts. I think if I remember rightly that this was initiated by the "Astro-Physical Journal" some years ago in America. I think the National Research Council appointed a Committee to take it up, and they persuaded certain other sciences to follow suit. In the Metallurgical field we did try at the Institute of Metals—Mr. Shaw Scott, who is here, will correct me if I am wrong—to see if that method could be applied to abstracts in that field. Difficulty was experienced. The matter was thoroughly studied, but it was put aside for the time being, because the method as worked out for certain sciences, as Astro-Physics and Biology, was not really applicable, without much more expert development, to Metallurgy and possibly to subjects like Engineering. It might be a most useful thing to investigate that particular problem further, and to see if by study and simplification a method could be devised which would be applicable; because obviously if each original author's article were to carry with it a brief and comprehensive abstract, that would go a very long way towards simplifying the subject, both in cost and in kind.

Major W. E. SIMNETT: The Institution of Civil Engineers has always insisted that every paper presented to it should be accompanied by a brief abstract by the author. Whether we published it or not, every paper given at the Institution had to be accompanied by the author's own abstract of that paper; very often it was this abstract which was published as a basis for discussion of the paper. That question, and also that raised by Mr. Rottenburg, are matters to which I wish to refer again to-night in the discussion on the press.

Mr. F. K. NEATH (British Cast-Iron Research Association): Major Simnett has referred to the Engineering Index, and Mr. Hetherington to the necessity of getting abstracts to the people concerned very quickly. The "Engineering Index" is kept up-to-date by publishing the abstracts in the monthly journal "Mechanical Engineering," with a supplementary page for the very latest received when going to press. Is it not possible in England, if this Engineering amalgamation does take place, that the abstracts which are made by the various Engineering sections should be published in their respective journals when they appear, and that these abstracts should be standardised and collected together at the end of the year or half-year, and published in a volume of that nature, so as to save the various volumes, such as "Science Abstracts" and the Civil Engineers' abstracts that we have now? I make that suggestion for what it is worth.

Major W. E. SIMNETT: Yes, that is my suggestion—that all the abstracts should be published uniformly in the Journals of the respective societies, printed possibly on one side of the paper as is already the case with "Mechanical Engineering" for purposes of cutting up in the various libraries.

Mr. G. B. WILLEY (Messrs. Hadfields Limited, Sheffield): I think that as librarians we have to regard all matter that comes into our net as good fish; but from the point of view of readers, can we not have rather too much co-ordination in abstracts? For instance, I remember that at the time when I was using technical literature rather than handling it as a librarian, I found it of great advantage to have two or three different abstracts of the same article, because very frequently indeed these were by no means the same. It was possible by that means to get a much better idea of the original inaccessible material. Then I think Major Simnett is rather pessimistic about the lack of co-ordination. Speaking with regard to Chemical Societies, there is a very distinct movement towards co-ordination amongst the societies at present; not merely amongst their libraries, but amongst the Societies themselves. So far as the library is concerned there is an arrangement whereby a number of the principal Chemical societies have the use of the library of the Chemical Society. Then with regard to abstracting, there is a good deal of reciprocal arrangement between the British Chemical Societies, for instance, and the American Chemical Societies, whereby a good deal of abstracting is done in common; so that at any rate for Chemistry,

if not for Engineering, there is already an effort being made in the direction in which Major Simnett would like to move.

Major W. E. SIMNETT : I do not suggest there is a lack of co-ordination in the Chemical field ; I know what is being done there, and my remarks only had reference to the Engineering field. My feeling about abstracts is this : It is said that abstracts differ in value. Of course they do. It depends on the individual judgment of the abstractor. I came to the conclusion, after a good deal of experience of abstracts, that a full abstract is not enough for the man who is specially interested in a particular subject. What he really wants is the original article. He wants as full information as he can get, and so a brief abstract bringing out the principal points of that article is designed only to guide him to that ; whereas in the other field, for a man who has only a general interest and wants to keep himself posted more or less with advances in that field, the briefest abstract is sufficient, because it contains enough to inform him what is being done. So I rather incline, after a good many years' connection with technical abstracting, to say that what you want is not a full abstract at all, but a sort of expanded index entry, which tells you concisely what is in the original, so that both the specialist and the person generally interested can be served in the same way. The one consults the original ; the other is content with the brief entry, which will not err greatly in judgment, because it is primarily a matter of indexing rather than a personal filtering process.

ABSTRACTING.

By T. F. BURTON, B.Sc. (Editor of the "Bureau of Chemical Abstracts").

An abstract is defined in Murray's "Oxford Dictionary" as "A summary or epitome of a statement or document." This may be expanded by saying that a good abstract is "an *ad hoc* summary . . ." for the fundamental basis of abstracting is that the final product shall convey to those who read it the main facts which are of particular interest to them. Every periodical which publishes abstracts is read by a more or less large and heterogeneous body of people, whose interests must naturally be divergent; hence it is manifestly impossible for an abstract—wherever published—to meet completely the needs of the whole of its readers. A compromise is therefore necessary, and the aim should be to make the abstract of the greatest value to the largest possible proportion of those before whom it will eventually come.

The great increase in the amount of periodical literature during recent years has made abstracts more necessary than ever before, particularly to the scientific worker. Twenty-five or thirty years ago, a chemist working in a particular field could find practically all that he needed in half a dozen or so different Journals. What a different state of affairs exists to-day! Imagine the plight of the hapless worker on alcoholic fermentation, if no abstracts were available to him. He would first have to contend with the four British and three American Journals which may contain papers on his subject, and there may also be Government bulletins to be looked for. But his real difficulties begin when he comes to the German literature; here, in addition to the purely chemical journals: The "Berichte," the "Annalen," and the "Journal für Praktische Chemie," he will find it necessary to see the specialised journals: "Biochemische Zeitschrift," "Zeitschrift für Physiologische Chemie," "Fermentforschung," and "Wochenschrift für Brauerei," whilst papers on the kinetic aspect of the subject occasionally appear in the "Zeitschrift für Physikalische Chemie," and recently some papers on yeast maceration juice have found their way into "Kolloid-Zeitschrift." This now only leaves the French Italian, Japanese, Dutch, Belgian, and a few other journals to be scanned. Abstracts thus save him a very large amount of work and time by gathering together from all these sources some record of the papers in which he is likely to be interested, and indicate to him those which it is necessary for him to see in the original.

Since the present writer has been connected largely with the production of abstracts of chemical literature, attention will be directed more especially to that aspect of the subject, although many of the general considerations on abstracting apply with equal force to every branch.

In discussing the questions "What is the best type of abstract to produce?" and "Who is best qualified to prepare such an abstract?" it is well not to be too dogmatic, since different types

of paper require different treatment. In general it may be said that the most important function of an abstract is to be truly informative, for it must be remembered that abstracts are prepared not only for to-day's use, but for to-morrow and many years to come. A comprehensive set of abstracts covering a number of years is one of the most valuable works of reference it is possible to have.

It follows, therefore, that, with a few exceptions, an abstract should not merely consist of a review notice or list of contents of the paper in question, but should aim at giving an accurate, concise, and, if possible, readable account of the work described by the author.

An abstract of any particular scientific paper will come before two very distinct classes of readers, viz., those who are actually working on the subject under treatment or a closely kindred one, and those who are not, but simply read it for the sake of general knowledge and interest. To the latter class the abstract should convey sufficient information of the work carried out to make it intelligible; to the former it can do no more than tell him that such work has been done, thus furnishing him with an indication of what he must read in the original as soon as opportunity offers. More than this should not be expected of an abstract.

A preference is sometimes expressed for abstracts to be of a critical nature. It is conceivable that such abstracts would have a very high value if a sufficient staff of unbiassed experts could be secured to ensure uniform treatment throughout, and if the epitome and the criticism could be clearly differentiated, but the practical difficulties in achieving this seem to render it safer not to attempt, quite apart from the resulting increased bulk of abstracts—nowadays a very serious consideration.

A point that often demands consideration is how far matter that is not new should be abstracted or even noted in an abstract publication. Speaking solely of chemical literature, British practice favours the course of dealing only with new matter, excepting in a few cases of lectures or surveys by eminent scientists which are deemed worthy of note by title only. The reason for this attitude is largely an economic one: the multiplicity of publications to-day results in an increasing mass of general descriptive scientific literature, without novelty (but, nevertheless, of considerable utility), and if an attempt were made to record even the titles of all of these, it would involve a very serious addition to the bulk of abstracts literature, which could ill be borne by the already overburdened Learned Societies. It is felt that if such an addition were made, the quality of the abstracts of new matter already published must suffer from the inevitable condensation to which they would be subjected.

American practice differs from the British in this respect. The motto of "Chemical Abstracts" published by the American Chemical Society is "Be comprehensive," and certainly the field they cover is an enormous one, judged by the number of abstracts

printed and of periodicals received; but their frequent use of contracted words and symbols makes them difficult to read and is not generally regarded with favour in this country.

Leaving out of consideration the general scientific surveys already mentioned, doubts and difficulties are always confronting those whose duty is it to select papers to be abstracted for any particular object. Notable instances of this are met with all too frequently in connection with every abstracts periodical. For example, two of the sections of "Abstracts of Papers in Pure Chemistry" (issued by the Bureau of Chemical Abstracts) are entitled "Biochemistry" and "General Physical and Inorganic Chemistry." It is frequently not a little difficult to say whether a paper deals with true biochemistry or merely with pharmacology or physiology. Again with much of the modern work on subatomic and allied subjects the borderline between physical chemistry and pure physics is very nebulous.

The choice of an abstractor is a matter on which no precise ruling can be given. In general, it may be said that he should have a thorough knowledge of the subject, though he need not necessarily be an expert on the particular aspect of the subject with which the paper deals. Some chemists seem to have an inherent talent for abstracting, with the result that their work, even from the start, is excellent. Others may make a poor beginning—possibly due to nervousness or over-anxiety—but with a little experience and encouragement become really efficient workers. There are yet others who, though anxious to do the work, and able chemists, seem constitutionally unfitted for the task, which is one requiring much patience, care, accuracy, and thoroughness. To make a good abstract is not an easy matter, and requires no small amount of skill and judgment on the part of the abstractor.

I should like here to pay a warm tribute to the very excellent work that is being done by the abstractors of chemical literature, many of whom devote a very considerable amount of their spare time to it. It is true that such work keeps them in close touch with scientific literature than might otherwise be possible, but nevertheless it is largely a labour of love with them, since the material recompense which the large majority of scientific societies is able to offer is admittedly inadequate for the work *qua* work.

It is to be hoped that in the not too far distant future the Societies will be in a position to reward such efforts on a more substantial basis. Is it too much to look for a Government subsidy to aid the production of scientific abstracts by properly constituted bodies? Surely the value of the work done, both for present use and for posterity, is sufficiently great to warrant a substantial contribution from the National Exchequer.

Workers in Chemistry and allied subjects are well—some think too well—catered for in this country. In chemistry itself, there are the "Abstracts in Pure Chemistry and in Applied Chemistry" published by the Bureau of Chemical Abstracts under the aegis of

the Chemical Society and the Society of Chemical Industry. Many of the special branches of applied chemistry have abstracts publications of their own, issued either by the respective Societies themselves, or by private enterprise : a notable example of the latter is "The International Sugar Journal," whilst the Societies which publish abstracts dealing with particular sub-divisions of chemical industry include the Institution of Petroleum Technologists, the Textile Institute, the Society of Dyers and Colorists, the Society of Glass Technology, the Ceramic Society, the Iron and Steel Institute, the Institute of Metals, the Oil and Colour Chemists' Association, the Society of Leather Trades Chemists, the Institute of Brewing, the Royal Photographic Society, and the Society of Public Analysts. Chemical science is also dealt with in some measure from the physical side in "Science Abstracts" and from the physiological side in "Physiological Abstracts."

The fact that so many Institutions, each dealing more or less directly with one branch of chemical science or industry, publish their own sets of abstracts results in a large amount of duplication, or rather of overlapping, of abstracts. Many papers on, for instance, the chemistry of petroleum and oil refining, abstracted by the Institution of Petroleum Technologists are necessarily dealt with also in Abstracts of Papers in Applied Chemistry, although possibly not so fully. Many similar instances could be quoted. It might be argued that papers of such a nature should only be abstracted by the Institution immediately concerned, but it has always to be borne in mind that these papers have a more or less direct interest to many workers outside the scope covered by the membership of that Institution. Thus a paper on Petroleum Distillation will probably contain much that is of value to the Tar Distiller. The view might also be taken that it is unnecessary for many of these specialised Societies to publish abstracts, since these could be embodied in Applied Chemistry Abstracts. Some such course might be possible if the members of the specialised Societies only required a survey of papers dealing with the chemical side of their work, but this is very far from being the case. To utilise again the example just mentioned, the members of the Institution of Petroleum Technologists naturally require information on the world's progress in such items as methods of production, storage, and distribution. The same applies to all the other specialised sets of abstracts : the glass technologist demands to know what has been done on the mechanical side, such as in rolling sheets or making bottles ; the member of the Textile Institute needs records of work on the mechanical properties of fibres which have no direct bearing on chemistry ; and so on.

If one abstracts publication covering the whole field of scientific and industrial endeavour were possible, that might be an ideal solution of the overlapping problem ; but it is to be feared that such a publication would be so vast in size and so costly, and further only a very small proportion of the whole would be of interest to each individual, that the expense of producing it would be altogether prohibitive.

With the growth of science the borderlines between the so-called individual sciences are being broken down, and the sciences are tending to merge more into one another, and also they are daily permeating more deeply into the industries. It is this overlapping amongst the sciences and the industries that is the cause of much of the overlapping that occurs in abstracts.

Whilst the elimination of duplication of abstracts as a general proposition appears impracticable, some progress is possible and is being made in certain directions.

For many years past, the two Societies which are responsible for the abstracting of chemical literature—pure and applied—in this country, viz., the Chemical Society and the Society of Chemical Industry, have been seriously concerned with the overlapping which occurs as between their respective sets of abstracts.

During the past ten years a system of collaboration between the Editors, whereby the same abstractor has been employed to deal with a paper recorded in each set of abstracts, has resulted in a certain amount of saving of duplication.

A very definite further step was taken when in 1923 the Bureau of Chemical Abstracts was formed as a result of a desire on the part of the Councils of the two Societies to secure closer co-operation and unification in the production of their abstracts. Since the beginning of 1924, the Bureau has controlled the production of the abstracts, which still form constituent parts of the respective journals. The Bureau is composed of a Chairman and four nominees of each of the Societies, together with the Editor and eight Assistant Editors; in addition, Mr. A. J. Greenway, who for so many years was in charge of the abstracts section of the Journal of the Chemical Society, gives constant and valuable help on points of nomenclature. One of the many points to which the Bureau has given its consideration has been the elimination of the overlap as between the two sets of abstracts; this at present amounts to some 10% of the whole.

It is gratifying to be able to state that the Bureau has succeeded in obtaining the consent of the Councils of the two Societies to eliminate entirely this overlap as from the beginning of 1926, and further to publish both sets of abstracts in the same format and type, with a single annual index covering the whole.

A very notable instance of the duplication of publication of abstracts of chemical literature in the English language is found in the abstracts published by the Bureau and the "Chemical Abstracts" of the American Chemical Society. There is a strong feeling in many quarters that one chemical abstracts publication should suffice for both British and American chemists, and the subject has been discussed on several occasions, but unfortunately there appear to be so many difficulties in the way, due both to national prejudices and peculiarities, and to practical obstacles, that there does not seem much possibility of any definite steps being taken for the present in this direction.

The first step in the elimination of overlap, in whatever form it may exist, is co-operation between the parties concerned, and it is in this direction that there appears to be the greatest opportunity for progress, in this country at any rate. Though a comprehensive publication of scientific and technical abstracts may be impracticable there is a very definite need for some form of central board for the co-ordination of abstracts, on which all the Institutions concerned would be represented, though retaining their individual abstracts publications.

One visualises a kind of clearing house for abstracts, where all scientific and technical publications are received and dealt with by the respective Editors, who would have periodical conferences on the many points which arise for discussion. Under such a scheme it could be arranged that when a paper has to be abstracted for more than one set of abstracts, it should be dealt with by the same abstractor whenever possible. There are instances of papers of which it is desirable that the two abstracts should be made by different abstractors, but these are exceptional. A large amount of duplication of effort would be saved thereby. Under such a scheme too, the Editors would have available to them a much wider range of literature than is possible at present. The details of such a scheme would require to be carefully worked out, but it appears to be one that merits further consideration.

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Mr. P. K. TURNER ("Experimental Wireless," etc.): To what extent in making an abstract is it desirable to call attention to obvious printers' errors, clerical errors or slips on the part of the author? And if you start to do so, it is possible to draw a line between obvious slips, and errors of a less obvious nature?

Mr. T. F. BURTON: I think that is a matter of individual opinion. Our practice is, where slips are very obvious ones—and even if they go fairly deeply into the matter—to correct them when abstracting; but if there is any really serious point in error in the paper, or if there is an obviously wrong deduction from figures, then our practice is to communicate with the author of the paper and get him to corroborate our ideas.

Mr. H. ROTTENBURG: The author says it is too gigantic a task to consider abstracting all scientific literature. Who are the unlucky people to be left out, because each individual group naturally thinks that it is sufficiently important? It seemed to me that the solution lies in co-ordination between the different bodies.

Mr. T. F. BURTON: I think the speaker has misunderstood me. I certainly did not intend to say that all scientific literature should not be abstracted. What I intended to say was that to have one publication covering the whole of scientific literature was too gigantic as an economic proposition.

Major W. E. SIMNETT: Referring to the unsuitability of the author as his own abstractor: we have behind the author an entirely ruthless and brutal person in the Editor. One could always rely on the author to stress the points in his paper, but Editors are unmerciful and reduce him to what we may consider as an abstract of his abstract.

Mr. T. F. BURTON: Our trouble is that sometimes we find the author has missed what is really the most important point in our opinion; instead of giving a real abstract they give the points they have touched on, not what they have done and how they have done it.

Mr. HAROLD E. POTTS, M.Sc. (Chartered Patent Agent): As one who uses chemical abstracts a good deal I should like to protest against the suggestion of the lecturer that it would be desirable to have one single series

of abstracts. It seems to me that it is most desirable that we should have a certain amount of duplication, because there is a very grave risk if you have only one series of abstracts that important points may be missed; .On the question of exchange, I think it would be desirable to omit out-of-the-way publications in (say) Czecho-Slovakia or Japan, because these will probably also appear as original communications in one of the better-known languages.

M. PAUL OTLET (Institut International de Bibliographie, Bruxelles) : The first purpose of abstracts is that they should be readable, so that men who have no time to read the originals can follow the development of science. The second is the necessity for abstracting the same series of facts in the same papers—for instance, it is necessary to separate botany and zoology.

The ideal solution is that we should have one book—not millions of books, but only one book—a universal book, by consulting which we can ascertain the present state of knowledge, without overlapping or error. Is it not possible in abstracting to arrange the material so that it can be automatically built up with such a book, which shall form in future an encyclopaedia or international treatise ?

Mr. T. F. BURTON: In the abstracts of pure chemistry that are published by the Bureau a point is made of recording every new compound that is prepared, and printing it in italic type; so one has only to run through the pages and pick out the italic type, to get the whole of the new compounds occurring during the year.

Mr. G. S. DUNCAN, M.A., B.Sc., F.C.I.S. (Society of Glass Technology) (Communicated) : The opinion was expressed that it was desirable to have greater co-ordination in the abstracting of technical papers than at present existed. It is true that an omnibus abstracting service has certain advantages. But, as Mr. Burton pointed out, some of the smaller bodies concerned serve very special needs. That they do not favour a general sort of clearing house for abstracts is not due to jealousy, as was hinted by one speaker. It would be truer to say that such a body holds that by maintaining its own identity, individuality and complete independence, it can best serve the industry with which it is connected.

NOTE ON SOME OF THE DIFFICULTIES CONCERNING THE TRANSLATION OF HIGHLY TECHNICAL LITERATURE, WITH SPECIAL REFERENCE TO ENGINEERING TERMS.

By H. I. LEWENZ, M.I.Mech.E., M.I.E.E.

(Editor; British Section, Schlomann-Oldenbourg Illustrated
Technical Dictionaries.)

I have been asked to make a few remarks in connection with the proposal to compile a Classified Register of Translators, and I intend to touch on a few of the difficulties met with in the production of Technical Translations. No attempt is made to deal fully with this very interesting subject, and the following points are brought forward with the object of provoking a useful discussion.

Expressions occurring in technical literature may be divided into :—

A.—Expressions which, being based on Greek or Latin words, are approximately the same in all Western European languages, and may therefore be called International. Some of these terms are actually regulated by an International Convention.

B.—Expressions which are peculiar to a language. These may be called National.

National terms may be subdivided into :—

1.—General, or terms commonly used all over a country.

2.—Local, or terms peculiar to a district or locality.

3.—Special names of things or processes,

(a) invented in a particular industrial undertaking, for example the "Central Valve Engine," of Willans, or the "Sleeve Valve Engine," of Daimler,

(b) peculiar to a special machine or part thereof, for example the "Oscillator," as applied to certain abrasive machines,

(c) called after place names where the thing was made or the process was used: examples, "Axminster," "Lyddite,"

(d) called after the name of the inventor: examples, "Melinite," "to sherardize."

C.—Novel terms invented among nations where the technical concept is something entirely new. In such cases the thing or process is christened with a phonetic corruption of the Western European word, or the European term is imported unchanged, or the expression may be onomatopœic, or again specific.

Exactitude of rendering is of the first importance in a technical translation. The translator must therefore be first and foremost an expert in the subject with which he is dealing.

Secondly he must have full command of the languages involved. (A very rare combination.) The expert qualification is a *sine qua non*, because a dictionary, no matter how highly specialized, will not suffice to guide him to exactly the right word which should be used in any particular case, and will thus not prevent him from making mistakes which may materially affect the meaning of the composition. The knowledge of the languages is equally important, and it may be added that a mere book knowledge is insufficient, the translator must have that sense or ear for the right word which is an inborn gift with some people, and which may not otherwise subsist.

It is extremely difficult to find in one person this combination of expert and linguist. There are, of course, men to be found who possess these qualifications, but more often than not their work will not allow them the leisure, even if they have the will, to undertake the laborious work of translation. Hence, in order to obtain really satisfactory results, it is frequently necessary to arrange for collaboration between two persons, one of whom is the better linguist and the other the greater technician.

The extraordinary variation in the names of machine parts or processes in different localities introduces further complication. This is remarkably the case in truly industrial countries, i.e., in countries where the industry is indigenous, and where it has been developed from the very first beginnings, as opposed to those countries where a particular industry has been taken up only after it has been developed and brought to a certain stage of perfection by another nation. To-day, when the original processes have been perfected, and are carried out by very complicated machinery, the old names persist, although the part in the present-day machine may bear no resemblance whatever to the original part. These local variations are very noticeable in the British Textile Trade, in Mining Terms in many countries, etc.

Then we have the variation in what I may call the "descriptive coefficient" of different languages. If, for instance, we compare technical German with the equivalent English, we find that the former is picturesque almost to excess; while technical English is at times perhaps unnecessarily laconic, and leaves a good deal to the apprehension, or, and this is less desirable from some points of view, to the imagination!

To give an example, a very ordinary piece of mechanism is the common union of ratchet and pawl. In this country we speak of a pawl, with, as a rule, no further qualification, but the German will call it "a pawl that pushes," or a "pawl that pulls," a "bent pawl," or a "straight pawl," as the case may be. Unfortunately the German compound words are really descriptive sentences, with or without hyphens, and these occasionally give the translator some trouble. If, as may happen, the translator does not at once recognize the word in its particular connection, and attempts a literal translation of the words forming the compound, he may easily make a mistake.

Again we find words, which while being identical in form in several languages, do not always have similar meanings. A familiar example is the word "armature." This word has a number of meanings, but in English it is very commonly used to describe a part of a continuous current dynamo-electric machine. The same part in French is generally described by the word "induit," and in German by the word "Anker."

The word "armature" in French is used to mean armouring (e.g., of a cable), the metallic lining of a Leyden jar or condenser, or as a general term for external fittings and mountings. (e.g., on a boiler).

The word "Armatur" in German is rarely used in the sense of the armature of a dynamo, but generally has the same significations as in French. The "armouring" of a cable in German, however, is rendered by the word "Armierung." Nevertheless, the same word "armature" as used in connection with a stationary electro-magnet is *common to all three languages* mentioned.

When we come to translating modern technical terms from or into an Oriental language such as Chinese, for example, we have a very different problem to solve, because their technical expressions are built up in a totally different way. Thus the first machine known to the Chinese appears to have been the loom. They called it "chi" (pronounced jee) which means generally "moving power." The word "ch'i" (tchee) means "ability," hence "chi ch'i" is their expression for a machine. The word "ch'e" (tcher) means a vehicle or cart, hence we get "chi ch'i ch'e"—a motor car. Similarly the word for lightning is "tien" (dyen) and this has been adopted to mean electricity or electric. Hence we have "tien ch'e," meaning an electric tramcar, and so forth.

When, therefore, new expressions are required they have to be provided for by edification, or if this is impracticable the Western International word or possibly a National word is imported.

It can be well imagined that in some cases a good deal of circumlocution is necessary to convey the right idea to the Oriental mind.

The foregoing gives a mere indication of some of the difficulties incidental to technical translation, and may serve to show the desirability of employing specialist translators who will deal effectively with work connected with any particular branch of technology.

The proposal to compile a register of such persons should be of great value, and I am convinced that, if steps are taken to obtain a detailed record of their individual qualifications and experience in the different branches of technology, and provided

at the same time the existence and nature of such a register is brought to the notice of the parties most likely to be interested, full use would be made of it.

* * *

Major W. E. SIMNETT : May I express my personal indebtedness to the Schlomann-Oldenbourg Technical Dictionaries, which are invaluable to those who have to wade through foreign technical literature. I had great difficulty during the war in getting together a staff of technical translators for the War Office for the purpose of the "Technical Review." The difficulty was that though we had plenty of applicants who knew the languages more or less, they certainly did not, in many cases, know the subject-matter with which they would have to deal. The proposed register of translators will have to be very carefully compiled, and I cannot see any other way than to entrust the various parts of the work to the various institutions which are thoroughly familiar with the different fields of science, and which can vouch for the qualifications of the men whom they propose as translators. Otherwise I fear that possibly more harm than good would be done by such a compilation.

Mr. ERNEST I. ROBSON (Institute of Agricultural Engineering, Oxford) : Most of the translation I have had to do hitherto has been of an agricultural character, and has involved as such a certain amount of botany and a certain amount of chemistry. Cannot we by some means induce people who write on subjects which involve either botany or chemistry always to put in the chemical formula when they mention the name of a chemical, and always to put in the Latin name when they mention the name of a plant? I have turned botanical dictionaries in various languages inside out in order to find what was meant by some name that a Norwegian or a German has given to a grass. Mr. Lewenz said something about the picturesqueness of the technical journals. I have studied German fairly carefully, but when I meet with technical German I am absolutely up against a dead wall. We are a fairly representative body. Cannot we make an appeal to the scientists of the German nation to write in a language that we can understand? I had a German medical paper handed to me recently, and it was perfectly plain reading, although I know no medicine; but that is the sole instance I have ever found in German of a paper that one could read through easily. Another instance I might mention is this; a great Russian wrote a book on manures which was translated into German. The German editor apologised in the preface that it was such very bad German. I could read that book from start to finish with the greatest ease.

Mr. Lewenz spoke about a clearing house. I had another clearing house in my mind, and that is a clearing house for lexicography. He mentioned the enormous amount of new and local words: this is a matter I have been continually up against—local words for bits of the plough, local words for haystacks, and so on. There are probably as many in English that I do not know as there are in German or Dutch. I am sure such a clearing house in lexicography, to which we could send our new and local words, would be very useful. The only other piece of advice I should like to give to translators is not to use German-French or Dutch-English dictionaries, but to use German-German, Dutch-Dutch, Swedish-Swedish and so forth. They will get through a little better, and will find more words there.

Dr. O. KENTISH WRIGHT (Ministry of Health) : I should like to ask the last speaker to give me the name of that German paper on medicine which he says is easily legible. I have never met one yet.

Mr. E. I. ROBSON : It is many years ago, and I do not remember the author. However, it is a fact that it was written in short sentences and was absolutely readable.

A VISITOR : All that has been said this afternoon on the subject of the difficulties of technical translation seems to point to a matter that I have not seen anywhere on our agenda; that is the possibility of co-ordination between our Association and one or other of the international language bodies. I could produce a good deal of evidence to show that in many instances a translation can be made more easily and more accurately into an international language, and out of it into a national language, than from one

national language into another. I am seriously of opinion that this Association should investigate the subject; you will find that all those who are interested in international languages would be only too willing to co-operate.

Mr. H. I. LEWENZ: I do not think there is anything to be said in reply except with regard to Mr. Robson's remarks about German. There is one point that has to be borne in mind—that the German of to-day is a totally different language from the German of fifteen years ago. In the German of fifteen years ago there were a large number of names of Latin origin, called *Fremdwörter*, but since that time and since the war they have ousted a great number of these foreign words and invented other words to take their place; that has not added to the understandability of the language for outsiders. The Germans also have a horrible way of wrapping up a sentence and putting in a lot of what the Oxford University Magazine some years ago called jargon. Their vocabulary is all right; the trouble is with the long sentences and the enormous amount of unnecessary words used.

THE CLASSIFICATION OF A SPECIALIST LIBRARY.

By A. E. TWENTYMAN, B.A.
(Librarian, Board of Education).

There is an ambiguity in the title of the paper which I should like to clear up. I am afraid that the interpretation I am putting on it is not one which the majority of the members of the Conference would put upon it. The difference lies in the value given to the smallest word in the title. You probably thought it was intended to be general: I meant it to be particular.

I propose to speak to you about the principle we have adopted in our library at the Board of Education. I do not want to offer these remarks as suggestions for other people to copy; my experience has been too limited, and there are others whose knowledge is more extensive who will be able to give you better advice; but perhaps a statement of some of the difficulties which faced us when we tried to reorganise our library may be of interest to some members of the Association.

Dr. Hutton this morning spoke of the difficulty of grouping the libraries that are here represented, and when I look through the list it seems to me that there are almost as many libraries as there are members of this Conference; but it is possible to mark out a few groups under which some of these libraries may be arranged.

There is first of all a group of what you might call sectional libraries—libraries which embrace one whole field of human knowledge such as the Science Library at South Kensington. For libraries of this kind there need be no difficulty in devising methods of classification. If you were starting a new library there is no reason why one of the general systems of classification should not be adopted, and that classification used for the library. (This is not the case at the South Kensington Library as it is older than most systems of classification).

Then there is a number of libraries which are attached to societies, organisations and other bodies. The contents of these libraries are determined by the purposes and aims of the Association. I do not know what Mr. Cohen may keep in his library at the Conservative and Unionist Central Office; possibly he may feed his flock on political fiction; and even if he selects his books on the lines advised in some of the papers we have heard recently, we may be sure that his collection will differ considerably from that in Eccleston Square. For these libraries, no general principles can be enunciated. They must be formed in the light of the purpose for which each organisation exists.

A third group, concerning which some advice may perhaps be given, is what I call the subject libraries—those that have a definite nucleus and deal with a single subject, like agriculture, medicine, economics, or our own subject, education. You may say, "Why don't you take for your own library the classification out of the

general scheme ? ” Well, there are two reasons. First of all the general library embraces comprehensively all human knowledge, works inwards, and tries to fit all that knowledge into a recognised plan. The special library starts from its own subject, and tries to form proper contact with other sciences which lie outside its immediate subject. The arrangement of the material will be different from that in a general library. When we first started to reorganise our own library over 20 years ago, we examined the classification schemes that then existed, and came to the conclusion that none would really give a satisfactory basis for our arrangement. We then had to try and devise our scheme. First of all we considered what were the relations of our own subject to other sciences ; we found that with some of them there was a much closer connection than with others. There are certain sciences on which education—if there is a science of education—is founded, and we made those into a group of fundamental sciences. The classification which we adopted was the classification that suited our own library. When we came to the subject-matter we asked ourselves : How are we going to set it out ? The principle adopted was that the matter should be arranged in the order in which any professor or author who was going to treat exhaustively the subject of education would set it out for his readers or his hearers ; that is, so that anybody following the books on the shelves would be pursuing a course of instruction in the theory and principles of education. I should like just briefly to indicate what our headings have been. We have used practically the decimal notation, but not consecutively, because we found that we had rather larger blocks to deal with than the limitations of the decimal notation allowed. We began, as most libraries do, with a selection of the general works—dictionaries, bibliographies and so forth ; we had to put into this general collection the collected works of authors, seeing that they dealt with various topics, and the volumes could not be split up into their different component parts. Magazines come in here, and here we act on a principle contrary perhaps to that pursued by scientific societies. We retain in our main library dead magazines, although back numbers of current magazines are stored away. In education, material, if sound, does not harm with age. These magazines, if not visibly before the eyes of the reader are unknown ; we therefore give him the opportunity of making himself familiar with these by keeping what might be called the dead magazines in our living room. We then proceed to those fundamental sciences, physiology and psychology ; psychology is arranged to suit our needs and not the needs of the psychologist. The arrangement is very largely according to the age groups of the pupils. We have sections for child psychology, the psychology of the boy and girl, the psychology of adolescence, and so far as it exists, the psychology of the adult : but so far there is not very much material, except in general psychology. Logic and ethics are included, but without adding very much to our general store. Sociology is important because education is almost becoming a sociological function. Then we go on to education proper, beginning with the principles of education.

We then deal with organisation, treated generally, “ organisation ” being taken to mean the relation that should exist between

the school and society, between the school and the church, the state and the school, and the parent and the school; having determined organisation, we turn to the internal economy of the school and deal with curriculum and the theory of instruction.

We also have a group of books specially for the education of women. At the time when this classification was started the education of women was something apart; now possibly we should have to abolish that.

Next we are faced with a problem which affects all libraries that deal with human institutions. You have foreign experience to include as well as your own, and the difficulty here was: Are we going to distribute this foreign experience on a subject basis, or keep the whole of the organisation of a foreign country together? We came to the conclusion that the simplest plan was to keep it on a country basis, and therefore all our books on French education, for example, are together. The chief reason for this decision was the difficulty of distinguishing the categories of educational effort in different countries. An English secondary school is not the same thing as an American high school. The American high school includes a good deal of what we should regard as technical education, and it would be impossible to group together books relating to these two types on a subject basis. Technical education is an extremely difficult thing to classify, particularly in this country, because we have not organised the Board of Education on a mono-technical basis. Many of our technical schools, and a great deal of the technical literature, are general in character, and not special, as is the case in many other countries.

The next group deals with educational buildings and equipment. Then there is the section for methods of teaching, both general and special; last of all, we have a small section for text-books. Text-books have been excluded mainly on the ground of space, and also because they would not serve the purpose of our library which is a library primarily for students of education than for students of the subjects taught in the schools.

These few remarks will, I think, serve to indicate the principle we have adopted of trying to make our classification coincide with a systematic exposition of the subject matter with which our Library concerns itself.

SOME SPECIAL METHODS OF CATALOGUING TEMPORARY MATERIAL.

By L. STANLEY JAST (Chief Librarian, Manchester).

In the type of special library in which, I suppose, most members of this Conference are particularly interested, *i.e.*, the library collected primarily for supplying current facts in applied science, industry and commerce, the books take a secondary place ; and the periodical, the pamphlet, and the leaflet become the main sources of information. These bye-products of literature, so far as they are collected at all by the ordinary library, are kept for their permanent value as historical records ; the special library wants them for current use, and only exceptionally for permanent stock.

The problems they present, therefore, to the Special Librarian, both as regards storage and cataloguing, assume a somewhat different aspect, and demand a somewhat different treatment. To catalogue every individual newspaper clipping or trade circular is to waste time, material and labour, and even if these are forthcoming, I imagine the circumstances must be very exceptional in which this application of them would be justified. Yet the material must be immediately accessible and organised, and adequate keys provided, or there would be no point in collecting it at all. This note is concerned with the card forms and methods devised for the use of the Commercial Library in Manchester, and since adopted also for our Technical and Science Library.

I was desirous of having only one kind of catalogue for the most diverse material, whether book, pamphlet, trade catalogue, or clipping, and our staff being limited, it was essential to cut down indexing to the serviceable minimum. I had no hesitation in systematically classifying everything, on one system—in our case, an enlarged and modified Dewey. The clippings—I will begin with these—are stored in folders in a vertical file, the class marks being written on the folders, and the names of the subjects added. The empty spaces on the fronts of the drawers, on either side of the handle, are occupied by oblong cards, fitting into a beaded frame attached to the face of the drawer, on which the subjects covered by the folders in the drawer are listed alphabetically. A drawer front, quarto size, will enable some 72 headings to be conveniently displayed, and such a running key to the contents, on the front of the file itself, is the best general guide, rendering reference to the catalogue largely superfluous. It is important, however, that the searcher for material by means of the catalogue shall have his attention called to the fact that a folder of clippings exists. He finds in that case a card like Fig. 1 in the systematic subject catalogue. There is one card for every folder, and the text of the card is printed or multigraphed. The arranging word is "Clippings." If it is wished to ascertain whether there is a clippings folder on a given subject, without

consulting the file, it is an easy matter to look up "Clippings" in the alphabetical author order of the cards bearing the required subject number; absence of such a reference implies, of course, that there is no folder.

Miscellaneous pamphlets which it is not considered worth while to catalogue as separates have a similar card, arranging under the heading "Pamphlets" (Fig. 2). They are boxed together as a classified unit, and are rendered to the reader as a collection. This is a specially convenient form of card, when time does not permit of a careful examination of a number of pamphlets, some or all of which may deserve separate treatment when it is possible to make an adequate scrutiny, or which, though designed to be catalogued fully, cannot be dealt with at the moment. In this case, any pamphlets may be picked out of the collection, whenever convenient, leaving the rest as they are, and the card directing to them in its place. It is understood that a pamphlet catalogued separately goes under its author, and differs in no way from a book entry.

For trade catalogues, I have introduced a sort of alphabetical class within the systematic subject arrangement. The card employed for the subject catalogue is illustrated in Fig. 3. It contains the multigraphed heading "Trade Catalogues" on the top red line. The author—in this case, the firm name—is written below, followed by the title in the usual order. All such entries arrange in their subject unit by the main heading "Trade Catalogues" first, and afterwards by the firm names. The object is to bring trade catalogues together, and avoid scattering them amongst the book cards. The system achieves all the advantages of a separate trade catalogue index, while incorporating them in one single subject key to the contents of the library—"a consummation devoutly to be wished," in my opinion. Another card, directly under the firm name, appears in the name or author catalogue, but in order to indicate clearly its nature, the words "Trade Catalogues" are multigraphed in small type in the upper right-hand corner of the card (Fig. 4).

Trade catalogues which are not to be treated as separates are dealt with similarly to pamphlets, and the special card used for the purpose is shown in Fig. 5.

The principle illustrated has been applied to two other classes of entries, viz., maps and charts, and bibliography, and I give examples of the various cards (Figs. 6, 7, and 8).

Finally, I may say a word about the subject index. I think it is objectionable, for many reasons, to employ the printed index to the Dewey tables, and again, I dislike having any record to consult other than the catalogue. In our case, the index cards are incorporated with the name catalogue—so-called in preference to author catalogue, because it contains names of authors, of books in certain instances, and of subjects. It combines, therefore, the advantages both of the dictionary and of the systematic catalogues, differing from the former in that the subject entries

do not collect titles, but refer the reader to the corresponding cards in numbered order. The form of card and entry is given in Fig. 9. I first saw this system of indexing at the John Crerar Library, in Chicago, and I regard it as easily the most valuable "notion" I brought back from America when I visited there in 1904. I adopted it for the catalogues of the Croydon Public Libraries, and since at Manchester; it works admirably, and is so simple and convenient that I cannot understand why so many librarians continue to perpetuate the cumbrous and misleading dictionary system, particularly now, when most people have at least a bowing acquaintance with modern systems of book classification. But this note will become a full-fledged paper if I continue any longer. And so I stop, having said enough for the purpose, and mainly, I trust, said it *to* the purpose.

C	CLIPPINGS.
647.1	PRESS CLIPPINGS ON THIS SUBJECT ARE COLLECTED IN THE VERTICAL FILE, UNDER THE NUMBER GIVEN IN MARGIN
66675 C	

Fig. 1

P	PAMPHLETS.
a 656	MISCELLANEOUS UNCATALOGUED MATERIAL ON THIS SUBJECT IS COLLECTED UNDER THE NUMBER/S GIVEN IN MARGIN.

Fig. 2

Some Special Methods of Cataloguing (L. Stanley Jast.).

T		TRADE CATALOGUES.
676 Wc		Wallpaper Manufacturers, Ltd The decorative use of wallpapers. [192]. il. 9w.
66675 Ts	500	4S1923

Fig. 3

T		Trade Catalogues
676 Wc		WALLPAPER MANUFACTURERS, LTD. The decorative use of wallpapers. [192]. il. 9w.
66675 T		

Fig. 4

T		TRADE CATALOGUES.
a 621.3		MISCELLANEOUS UNCATALOGUED MATERIAL ON THIS SUBJECT IS COLLECTED UNDER THE NUMBER/S GIVEN IN MARGIN.
c 621.3		IF APPLICATION IS FOR THE PUBLICATION/S OF A PARTICULAR FIRM, ADD NAME OF FIRM ON APPLICATION SLIP.
d 621.3		
66675 T4		

Fig. 5

Some Special Methods of Cataloguing (L. Stanley Jast.).

M	MAPS AND CHARTS.
a384.417	MANCHESTER SHIP CANAL CO.
Col.	Plan of the Manchester Ship Canal. 13 1/4 in to 1 m.
	Fig.6
66675 M	

	Maps and charts.
a384.417	MANCHESTER SHIP CANAL CO.
Col.	Plan of the Manchester Ship Canal. 13 1/4 in to 1 m.
	Fig.7
66675 MN	

	BIBLIOGRAPHY. For bibliography of this subject, see
658.8	DIEMER, HUGO.
Dn	Factory organisation & administration 1910. il. 9 in. Biblio. 23 p.
	Fig.8
66675 ss 300	4S1923

Some Special Methods of Cataloguing (L. Stanley Jast.).

For books on subject/s named, see cards numbered as below in Subj.Catalogue		
Morocco		
Directories		380.464
Description		316.4
Foreign Trade		382.64
Production		338.0364
Tariffs		334.064
Fig.9		
66675 S	10,000	2N917

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Mr. JAST: (In introducing his paper). I take it the discussion on this and the preceding and succeeding papers will allow one to speak generally of the question of classification. There are two great weaknesses, in my opinion, in the decimal classification; The first is the practical neglect by Melville Dewey of the advantages of the alphabetic order. Mr. Dewey appears to have an alphabetic complex. When he has nine subjects which are of co-equal value in the classification scheme he never arranges them alphabetically, as you will notice in the classification. Well, if you have no other system of arrangement you might just as well arrange a series of headings alphabetically as not. That, of course, is not the main point of my criticism, which is that in a large number of subjects a point is reached where the hierarchical order is of no value; you may make one for yourself, but it is of no value to any other human being, whereas Dewey's order is of value; again and again in the decimal classification a systematic order is employed that is very largely artificial; it corresponds with nothing at all in literature (and after all, the main point in a classification is that it shall correspond to the literature which you classify), and yet is used where an alphabetical order is definitely indicated. One could give dozens of examples; I will give but one for the moment. We have a section of books devoted to special businesses. Mr. Dewey would arrange those special businesses in some mysterious hierarchical order; he would classify businesses. Well, I would not. I would say that here is a case where the only possible arrangement, the only sensible arrangement, is to arrange alphabetically under businesses; That is a point in which the Library of Congress system is far superior to the decimal. The Library of Congress uses the alphabetic arrangement constantly. Then there is another point in which the Library of Congress system is superior. Dewey, obsessed by his geographical arrangement applies that arrangement everywhere, and gives you no alternative. Now, if you have to classify cotton-producing countries it is a most cumbrous thing to have to use the whole nomenclature of the geographical arrangement in Dewey in order to indicate, perhaps, a dozen countries. There again it seems to me you want to arrange a geographical classification proper to that particular topic, leaving of course, your general classification for use where no specialised geographical classification is called for. You find this constantly in the Library of Congress, which refuses to be bound by one particular geographical classification. The mnemonic feature which Dewey praises so much is really of very little value indeed, and what value it has is confined practically to the main headings. The moment you come to sub-headings and sub-sub-headings, then the mnemonic value, in my opinion, vanishes. These are two points which should be considered in any re-drafting of the decimal classification, because, of course, it is perfectly easy to adapt both these characteristics to the decimal classification without adopting in any way the symbols and the particular arrangement of the Library of Congress.

EFFICIENT FILING.

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PRECIS.

By "efficient filing" is meant economically commercial filing that ensures the prompt finding of papers when required. The main features of any system to attain this end are the elimination of card, book and similar indices, which have to be entered at the time of and before filing, whether it be of correspondence or of technical data. This desired end is attained by appropriately filing multiply copies of all letters sent out. As no time need therefore be lost in placing material on the files, the filed matter can always be "Technical News" instead of "Technical History." The general correspondence file of a business should be considered as a Special Library. It should be name, subject and geographic cross-indexed by means of the multiply copies to which reference has just been made. A true alphabetical-decimal system for dealing with correspondence is described. Particulars are given also of the latest methods for the mechanical handling of correspondence files and for filing maps and plans. In the case of subjects, it is preferable to file by classification. For this purpose the International Decimal system of classification is advocated. Further a novel method of map indexing is explained.

INTRODUCTION.

To paraphrase a well known saying "Any fool can file, but it takes a wise man to file and find again." If a filing system is sufficiently elaborate and if enough skilled time and care is expended upon it, it can be made fool-proof and effective. However, it would rarely be the case that such a system would justify itself. In other words, though it might be accurate, it would not be commercially efficient.

Success in business is largely dependent upon efficient organisation, and this latter factor results from the careful planning of a good system. The underlying merits of a good system are simplicity, direct aim, finality, efficiency and economy. The soul of an efficient office and library organisation is its method of filing. If there is chaos here, it spreads like sleeping sickness over the whole business, enveloping the whole in its lethargy. The basis of every business is its documents, its correspondence, its data and other records. At every turn, the immediate production of papers is the *sine qua non* to successful negotiation—delay is a disturbing element. What is needed for most purposes is a quick, simple system of filing, not requiring much work, that will ensure things being found when required, and that eliminates the usual form of indexing, whether in books or on cards—in other words, "Efficient Filing."

There is no panacea for all ills, hence it is not possible to suggest a filing system that would meet every case. However, it is proposed to deal in this paper, with the methods that would suit the great majority of offices and libraries. (Slight modifications can of course always be made to suit individual instances.)

Anyone who has devoted any attention to the matter of filing, will appreciate that there are a considerable number of systems extant. It is not proposed here to describe or comment upon these, but rather to at once deal with the Author's final selection and the modifications he has made to the methods and equipment already available on the market. For lack of better knowledge, it is his ideal at the moment. However, all his ideals of the past have in course of time been improved upon. Hence this will be an opportunity for receiving suggestions for the improvement of the present method.

Filing in the modern office and library, may be conveniently grouped into two main classes of work :—

- I. Correspondence.
- II. Subject or Special Library matter (including Technical data, Catalogues, etc.).

I. EFFICIENT FILING OF CORRESPONDENCE.

A correspondence file is not generally looked upon in the light of a Special Library, as, considering its importance, it should be. Recently the writer had the opportunity of inspecting the very excellent filing correspondence arrangements of the Royal Dutch Oil Co., at the Hague, which is organised by a highly skilled and trained Librarian, and who also has charge of the Special Technical Library. Needless to remark, that filing system was one of the most effective that the writer has seen. Incidentally, it is the first time the writer has observed the International Decimal Classification system used for correspondence.

Economically, there can rarely be available more than one copy of an incoming letter, or other document, hence it can only be filed in one place, i.e., in its alphabetical, numerical and datal order. By modern means of multiply copies, whether obtained by aid of carbon paper, intermeshed typewriter or roller copying, several copies of all letters sent out can be rendered available for filing. This facilitates the equivalent of cross-indexing without the necessity for any written entries. As there are no written entries to be made, considerable time is saved, and hence the copies get into the files promptly where they should be. This use of multiply copies of letters sent out, is the basis of the modified system, which is to be described in this paper.

HANDLING OF CORRESPONDENCE. To obtain the desired desideratum of filing correspondence with a minimum of labour and a maximum of accuracy, it is essential that the correspondence should be handled methodically. For instance, it is a very good rule that all correspondence received should be dated with a rubber date mark on receipt and should not be filed until it has been marked by someone in a responsible position as having received attention. This marking may take the form of initials, imprint of a rubber stamp, or a private mark. Incidentally the use of a simple private mark is very often the quickest method. It is a golden rule that all correspondence should be dealt with on the day of receipt, even if it is only to state when a full reply would be made. As soon as a letter has received attention, it ought to be filed at once, and any further handling of the letter should be done in conjunction with its appropriate file.

MULTIPLICATE COPIES OF LETTERS. Ordinarily, if a letter is filed it is apt to be forgotten. To overcome this difficulty it should be a rule, in addition to the filing copy made of a reply to a letter, to also prepare at the same time two additional copies. The suggestion for these two copies of each letter written, is based upon the principle that directly a letter is signed, one copy must at once be placed in the correspondence files. Thus the letter received and the copy of the reply to this letter, promptly find a place in the correspondence files, where they should be, for ready reference. The second additional copy above referred to (which should preferably be on different coloured paper to that of the first copy), should normally be

placed five days ahead in a "Tickler" or reminder file (or a suitably longer period for foreign letters). In five days' time these additional copies are then distributed to the dictators of the letters and serve as a reminder to them as to whether it is necessary to follow up their original letter or to take any further action in the matter. It will be observed that this additional copy does away with the necessity for any card indexing system and the additional work involved therein, for the purpose of following up correspondence. When this second additional copy has served its purpose as a reminder, it should be passed and marked for filing and then be filed under the subject to which it relates.

The third copy, on still another coloured paper, is used first for the attention of the principal or the head of a department and is subsequently filed geographically in accordance with the residence of the correspondent. In this way reference may be made, in the future, direct to the name of the correspondent, or if this is forgotten, to the subject of the correspondence, or to the place of residence of the correspondent. Thus there is a three-fold method for getting hold of filed correspondence and, further, it is accomplished at the cost only of the extra carbon copies (all of which have already served another purpose, viz., as a reminder and for attention of the principal) and the time required to file it, which will be much less than that needed for any form of follow up entry or card indexing. A useful address list in geographical arrangement is also automatically compiled.

SIMPLE RULES FOR CORRESPONDENCE.—If a filing system is to be efficient, there are a few important rules to which strict adherence should be made, when replying to letters received or initiating correspondence.

- (a) Deal with one subject only in each letter.
- (b) Give the subject of the letter at the beginning.
- (c) Refer to the date of the letter to which a reply is being made.
- (d) Repeat the gist of the letter to which a reply is being made.

This last item is of very great importance in an efficient filing system, for it means, with few exceptions, that each copy is complete and fully intelligible in itself, hence reference rarely need be made to the original letter received.

In larger businesses, it is more generally the case than not that the Central Filing Department is looked upon rather as a place wherein to lose letters, rather than to find them—a fad of the managing director, rather than in the light of a most useful department for every individual. After a little thought, however, it will be appreciated that as a rule the individuals do very little themselves to assist the Central Filing Department; they systematically forget the times when it helps them and blame it unreservedly on those occasions when it fails them. In competition with the Central Filing Department, individuals often

start up all sorts of subsidiary files—which generally serve as long as they are not too bulky for the memory. In very large businesses there should be a Central Filing Department for copies of all letters sent out, though it may be advisable to have decentralised filing departments for the main sections of the business, in which the letters received, as well as the copies of those sent out, are filed. The point upon which it is here desired to lay emphasis, is, that if adherence is kept to the foregoing simple rules, the filing in any business will be far more efficient. For one thing nearly all the work of the office can be carried out with the aid of carbon copies, without the necessity for consulting originals. This in itself means a considerable saving of time, worth far more than the time and trouble expended in giving a subject to each letter and repeating the gist of the correspondence to which a reply is being made. While in cases of importance, the required correspondence will always be found where it should be, in its own folder in the main files.

MAKING MULTIPLICATE COPIES. For use in connection with the method of filing advocated in this paper, multiplicate copies of all outward correspondence are required. Hence it will not be out of place to suggest how these may be best obtained.

In accordance with the usual procedure in making carbon copies with loose sheets of paper and loose carbons, considerable time is lost. In other words, a typist can do 25% more work on single sheets of paper than if she had also to make carbons with the accompanying work of arranging necessary sheets and in separating them and the time taken in making corrections. To put the matter in another way, a typist can write 50 letters without carbons in the time taken to write 40, where carbons are employed. Another draw-back to the use of carbon copies is the trouble on the part of the typist in erasing errors and of the signer of making subsequent corrections on all copies when the letters are being signed. Again, a carbon sheet may not be correctly positioned, so a word or figure at the margin may be easily omitted.

However, all these troubles may be obviated (with the exception of the typist's erasures) and the speed of carbon copies brought up to that of single sheets by the simple expedient of attaching the sheets together at the top by an adhesive on the edge or by using letter headings with detachable strips stuck together at the top edge (to be torn off when the sheets are to be distributed). Each morning a junior fills sufficient sets of sheets for the day's work with carbons. The complete sets can be handled as easily as single sheets. Further, any corrections or signatures appear in the correct places on all copies, as the carbons should be left in until the letter is signed and the sheets are separated for distribution.

This same method of multiplicate copies can also be applied to postcards, if the latter are prepared in the form of sheets of paper, double size of the standard official postcard. Standard quarto size sheets can most conveniently be employed

for the copies. When typed, signed and detached, the postcard sheet is doubled and gummed with a gumming machine. It then arrives at its destination indistinguishable from an ordinary postcard, while the issuing office has been able to deal with it as easily and effectively as if it had been a letter and yet it has economised in the postage.

As the paper for the copies can be purchased retail at elevenpence or less per ream of 480 sheets, the cost of these carbon copies is very trifling.

Of course duplicate (or more) copies of correspondence can be obtained by means of roller copying machines. Three of these machines are, however, essential to make certain that triplicate copies have been made in every instance, as usually it is fatal to rely on passing every letter thrice through one machine, unless of course tally marks could be put on the letters each time they pass through.

Still another method is to employ paper in continuous rolls mounted above or behind the typewriter and fed into the machine in conjunction with an intermeshed typewriter ribbon (in place of the usual carbon paper). This is of course the quickest scheme of any, though it lacks the advantage of holding all the sheets in exact register for final corrections and signature.

FILE IN ALPHABETICAL ORDER. Correspondence can be most conveniently filed in alphabetical order of surnames (with their various appendages). This may seem a somewhat obvious statement, but it is not everyone who appreciates what is meant by it.

To begin with, straightforward alphabetical filing without any mechanical assistance invariably breaks down when applied to the filing of any considerable volume of correspondence and is simply hopeless for the filing of subjects. Unless the letters are kept in perfect alphabetical order (which is far from being as simple a matter as it sounds) the loss of correspondence is inevitable. Considerable mental effort is required to file or replace files of letters. It takes as long to replace a letter in the file after reference as it did when it was first put there. Briefly, the method is primitive and usually leads to chaos. Then there arises the question as to what is meant by "alphabetical order." There is quite a number of methods based upon the use of the alphabet employed in filing, e.g., strict alphabetical order in alphabetical order of surname; alphabetic; alphabetico; direct alphabetic; alphabetical group; dictionary; lexicon; the vowel analysis method (where the names commencing with the same initial letter are grouped in accordance with the first vowel after that letter); the second letter analysis index (where the names commencing with the same initial letter are analysed across an index card in the order of the second letter); the first vowel analysis index; first names of firms (or surnames of persons) in conjunction with the second names of firms (or first Christian name or initial of a person); register; geographic; numeric; and so on; including a number of trade descriptions

which really cover one of the foregoing. For most offices it will be found the easiest plan to adopt the system employed in the Post Office Telephone Directory. For one thing it is an existing standard which can be easily looked up by any junior in the office. In fact, it is just as well to mount the standard Post Office Instructions on a card, and then keep this card in the front space of the vertical file. This is of more importance than may appear at first sight, but it will be realised that it is very necessary that the system adopted for filing must always be uniform.

THE COMBINATION OF THE ALPHABET WITH NUMBERS. In conjunction with the alphabet, numbers should also be employed. The author has used numbers for a considerable period, but he employs them decimally, instead of in the usual way as complete digits. The reason for using numbers decimally or otherwise, is that it is always easier and quicker to replace papers in a file by number, than by the letter of the alphabet. Probably the cause of this is that very few persons, who are responsible for filing, have had an extended experience of the use of dictionaries, and hence when they come to the second place, and more particularly to the third place of letters, they do not grasp the significance of order sufficiently quickly. This is undoubtedly due to the fact, that in each unit place of the alphabet there are twenty-six characters, whereas in each unit place of a number there are only nine digits.

The usual divisions of the alphabet employed are one of the following—25, 50, 80, 90, 99, 100, 200, 300, 500, 999 or 1,000. For general purposes, a division of either 80, 90, 99 or 100 will be found most convenient. In fact, for a reason that will be explained a little further on, a division of 90 is to be strongly recommended, except for the fact that it is not at present available on the market as a commercial standard.

The next division for recommendation is the 100, which is an existing standard. In this case an additional nought should be understood before the numbers 1—9. The division of the alphabet should of course correspond in its proportions to those of the names of business persons or firms. Long experience in ledger indexing, directory work and the like, has resulted in very appropriate divisions being compiled by those who market office equipment of this class. One of the easiest ways for the ordinary person to arrive at this result is, to take a London Post Office Telephone Directory—which contains approximately 1,000 pages—and note the number of pages occupied by each division of the alphabet. This number will of course be the decimal fraction in thousandths of parts of the whole alphabet, e.g., if names starting with "S" occupy 100 pages of the Directory it will be one hundred/one thousandths of the whole; or by sub-division—ten hundredths or one tenth of the names.

The word "decimal" is often very loosely used in connection with the description of combined alphabetical and numerical systems of filing. Of course, any Arabic number, as is employed

in modern countries, is formed on a decimal basis (the only exception being the DUO-Decimal system—a special decimal notation divisible by both ten and twelve—which is only employed by a few scientific men). To employ numbers decimally, in the true sense of the term, for indexing purposes is, however, quite a different matter, as in this case the numbers are really used as a form of what might be better described as numerical shorthand, whereby a definite classification is indicated. The great advantage of the decimal system of classification is the unlimited interpolation that it permits. That is to say an item can always be so classified in its absolutely correct relative position, regardless of what numbers are already assigned to other items. In decimal classification systems, it is not usual to put a point in front of the number as is done in arithmetic, for the simple reason that whole numbers are never employed, and hence, as all numbers are decimals, it is needless waste of time putting in the point.

As an illustration, a very excellent plan for compiling an index for filing correspondence will be found to be that of first of all dividing the names into ten sections. These ten sections are quickly memorised by a filing clerk and hence considerable time is saved in arriving at the correct section of the alphabet. Such divisions would be as follows :—

Decimal Division	Group Name.	Group Range
0	—	Miscellaneous.
1	A	(A—B)
2	C	(C)
3	D	(D—E—F)
4	G	(G—H—I)
5	J	(J—K—L)
6	M	(M—N)
7	O	(O—P—Q)
8	R	(R—S)
9	T	(T—Z)

The next step is to utilise the second place of decimals for the sub-divisions of the alphabet up to the first three places of the alphabetical order of the letters composing the names. The "A" group will now be numbered 10 and will have sub-divisions from 10 to 19 and so on with other groups, each having similar sub-divisions numbered 0—9.

The next further step that is recommended, is to add a further two figures to the original groups, e.g., the "A" group will now become 1000. These last two figures are to be employed for order of accession classification purposes, as differentiated from indications of alphabetical order, which is of course the case with the first two figures. In most businesses these last two figures can be very usefully employed in three groups, the first figure being employed to indicate the group, and the second, the individual accession position in that group. The suggested three groups are as follows :—

- (a) for the name of the correspondent and also the page of his account in the Personal ledgers of the business.

- (b) for Subject or Technical Date files and
 (c) for the Costings sub-divisions of the business and the page number of the account in the Impersonal ledgers.

A Table is given herewith showing a complete combined alphabetical and decimal index designed along the above lines.

A COMBINED ALPHABETICAL AND DECIMAL INDEX.
 (90 divisions).

O—Miscellaneous.

1 A (A—B)			2 C		
A	—	ALY 1000	C	—	CAP 2000
A MA	—	AQU 1100	CAR	—	CAS 2100
ARA	—	AZA 1200	CAT	—	CHA 2200
B	—	BAR 1300	CHE	—	CIZ 2300
BAS	—	BEL 1400	CLA	—	CLI 2400
BEM	—	BLA 1500	CLO	—	COH 2500
BLE	—	BOZ 1600	COL	—	CON 2600
BRA	—	BRI 1700	COO	—	COR 2700
BRO	—	BUO 1800	COS	—	CRI 2800
BUR	—	BYW 1900	CRO	—	CZE 2900

3 D D—E—F			4 G G—H—I		
D	—	DAZ 3000	G	—	GIA 4000
DEA	—	DRO 3100	GIB	—	GOL 4100
DIA	—	DOZ 3200	GOM	—	GRA 4200
DRA	—	DYU 3300	GRE	—	GYT 4300
E	—	ELZ 3400	H	—	HAP 4400
EMA	—	EZR 3500	HAR	—	HAZ 4500
F	—	FFR 3600	HEA	—	HIG 4600
FIA	—	FLY 3700	HIL	—	HOP 4700
FOA	—	FOY 3800	HOR	—	HYS 4800
FRA	—	FYS 3900	I		4900

5 J J—K—L			6 M M—N		
J	—	JIV 5000	M	—	MAC 6000
JOA	—	JUX 5100	MAD	—	MAR 6100
K	—	KHA 5200	MAS	—	MAZ 6200
KIA	—	KYT 5300	MEA	—	MEZ 6300
L	—	LAZ 5400	MIA	—	MIZ 6400
LEA	—	LEQ 5500	MOA	—	MOZ 6500
LER	—	LEY 5600	MUC	—	MYT 6600
LIA	—	LLO 5700	N	—	NAZ 6700
LOA	—	LON 5800	NEA	—	NIZ 6800
LOO	—	LYX 5900	NOA	—	NYM 6900

7 O O—P—Q				8 R R—S			
O	—	OPS	7000	R	—	RHY	8000
OPT	—	OZO	7100	RIA	—	RIZ	8100
P	—	PAR	7200	ROA	—	ROZ	8200
PAS	—	PEC	7300	RU A	—	RY S	8300
PED	—	PFU	7400	S	—	SH Y	8400
PHA	—	PIZ	7500	SCA	—	SH Y	9500
PLA	—	POP	7600	SIA	—	SM Y	8600
POR	—	PRE	7700	SNA	—	SO Y	8700
PRI	—	PYZ	7800	SPA	—	STI	8800
Q	—		7900	STO	—	SZL	8900

9 T T—Z			
T	—	THA	9000
TIA	—	TZE	9100
U	—		9200
V	—		9300
W	—	WAY	9400
WEA	—	WEY	9500
WHA	—	WHY	9600
WIB	—	WIZ	9700
WOA	—	WYV	9800
X—Y—Z			9900

From the foregoing table, it will be observed that it is recommended that for most businesses the alphabet be divided into 90 parts commencing with 10 (or rather 1000) and finishing with 99 (or rather 9900). By the time two sub-division numbers have been added (00 being used for miscellaneous) every correspondent and every department will be indicated by a four figure decimal number and by a four figure decimal *only*. Hence, if a three figure number is observed, it will at once be realised that there is something wrong. In every case, the first two figures indicate the position in the alphabet; (the first representing in which tenth of the alphabet it is placed) the next two figures, if they are below, say 19, indicate the group and numerical position respectively of a correspondence folder in the particular sub-division of the alphabet indicated by the first two figures. If the last two figures are between 20 and 39 they deal with a subject group. On the other hand if the last two figures are between 60 and 79 they deal with some particular section of the costings account of the department of the business, whose alphabetical position is indicated by the first two digits. The figures 80 to 99, or over, are reserved for a second index card, in case of need, for additional correspondents or costings accounts. In a very large business, it is suggested that the alphabet be divided into 900 parts instead of 90, thus making every reference number a five figure number.

The same corresponding sub-division numbers should be employed throughout the business, for all similar sub-divisions of departments which are costed, e.g., the labour in any department should be written, say --44 (or--54). The two dashes, of course, indicate the two numbers representing the two initial letters of the name of the department in the alphabetical index. An advantage of this method is that if any reference is observed in the office ending in --44 (or--54) it is at once known to have some connection with the costings of labour in some department. Other examples are :—

--41	Stock
--42	Sales
--43	Materials
--44	Labour
--45	Charges

These numbers are also advocated for use as the page or folio numbers of the Impersonal or Costings Ledger of the business. For this purpose, the index cards of the filing system serves as the official record of the numbers of the different departments and in this way duplication is avoided. The same numbers would also be utilised throughout the business in the stock-room, on time-sheets, etc. The employment of these numbers, means that all the departments if placed in numerical order are at the same time automatically in alphabetical order. If the departments and their divisions, are suitably arranged the Impersonal Ledger becomes really a Costings Ledger, at one and the same time, as has been adopted by the Author in his Auto-Countancy system of semi-automatic or First-Final-Entry Book-keeping.

Both the Personal and Impersonal Loose-Leaf (or card) Ledgers of the business should be indexed on the same system as the main files. This method will be found to greatly speed up the reference to the various accounts.

It will be observed that by this combined alphabetical and decimal system of indexing, each regular correspondent secures a main (or division) double number and also a third group classification number from the guide card itself, and an individual subsidiary accession (or folder tab) number, from his consecutive number on the guide card.

The “shorthand” story told by each individual figure of the number groups, employed in a true alphabetical-decimal system of indexing, may be concisely summarised, as set out in the following table :—

Position of Number.	Indicates.
Thousands =	No. or Position in Tenths of Alphabet.
Hundreds =	No. or Position in Hundredths of Alphabet.
Tens =	No. in Classification Group.
Units. =	Numerical or accession order in Group (or in the case of Costings, a particular section of a Department).

THE FILING RECEPTACLE. As regards the mechanical handling of filing, general experience seems to indicate that, even for the smallest office, the unit container should be a four drawer, ball-bearing, vertical, steel filing cabinet. It may be argued that the quarto size should be sufficient; however, experience indicates that the foolscap size is much more satisfactory, as it is easier to handle the papers, and also in any business a certain number of foolscap sheets come to hand and if doubled take the space up more quickly in its depth—which is the all important direction in which compactness is desirable.

The cumbersome weight of the usual mass of folders and papers in a vertical filing drawer, supported by only one "compressor" or "follower," has always been a nuisance in the handling of the files. This has now been overcome by the employment of steel rocking guides, which sub-divide the drawer into a number of expandable compartments so that the contents of the drawer can be easily tilted in small sections, backwards or forwards through a definite, convenient angle.

Five of these steel guides are distributed throughout a standard drawer. A tongue at the bottom of each guide engages in the channel in the drawer bottom to prevent the guide from being forced upwards. Tubular projecting pieces are provided on the top of each guide to overlap the sides of the drawer and allow it to fall forward or backwards to a definite convenient angle. These guides are arranged so that they can move freely in the drawer bottom channel.

A front guide is also provided, but it differs from the others in that it has a flap hinged to its tongue. This flap keeps the bottom of this guide about 3 inches away from the drawer front, thus enabling the contents of the drawer to be tilted forwards. When the drawer becomes full, the flap on this guide can be lifted up and the contents of the drawer pushed forward, leaving a maximum space in the drawer for filing.

The principal advantages of these rocking guides are that they enable letters to be filed easily, without creasing, and without the necessity for removing the folders from the drawer, thus saving considerable time in filing. At the same time they keep the folders always at a convenient angle, thus preventing them from "riding-up" or from slipping down in the drawer.

Folders with binding attachments can also be used without the occurrence of the trouble of "riding-up." They keep the folders tidy, facilitating reference and double the life of the guide cards and folders.

The two centre drawers of a four-drawer vertical filing cabinet, should be preferably utilised for the current year, as they are much more conveniently accessible than the bottom and the top drawers. Anything that can be done to reduce fatigue on the part of the filing staff tends to increased accuracy in filing. In fact the author has seriously considered employing what may be termed the portable table type of vertical file, such as is employed for modern vertical card book-keeping systems. The

underlying reason for this is, that the staff can be seated at their work.

A SORTING FILE of the extensible hinge book type should be employed for the preliminary sorting of correspondence before it is actually placed in the filing cabinet. A separate opening should be provided in this sorting file for each letter of the alphabet. The speed of this preliminary sorting is greatly expedited if a decimal sub-sorter is used. This may either be separate or combined as a part of the main sorter. In this latter case it is generally sufficient to colour the ten main divisions of the alphabet (viz., the letters, A, C, D, G, J, M, O, R and T) reserving the tenth space for miscellaneous correspondence, which requires careful consideration before filing. (These ten divisions are those previously advocated for the alphabetical-decimal classification of the main file). The correspondence is first rough sorted into these ten divisions. Then, if there is a considerable amount of correspondence to be dealt with, each tenth is re-sorted into its appropriate division of the 26 openings. After which the contents of each opening are further finally sorted in the course of transfer to the main files.

The use of such a sorting file considerably augments the speed of filing. Should there be any unavoidable delay at any time in getting any of the correspondence into the main file, it can be found in its alphabetical position in the sorter, i.e., it has a definite temporary resting place, instead of lost amidst the mixed contents of a filing basket. A sorter of the extensible pattern, prevents the letters from being blown about or lost, as well as facilitating the filing.

THE FOLDERS. A variety of methods are in use for handling folders in vertical filing systems. Of these the most universally satisfactory scheme is that which tabbed index cards are interspersed with the folders containing the correspondence, i.e., there is no separate card index.

Behind each tabbed Index Card of what may now be termed the *Combined Alphabeical-Decimal System of Filing*, is placed a folder entitled "Miscellaneous" and bearing the same number as the Index Card. Naturally, all correspondence which can be classed under the section of the alphabet indicated on the Index Card, is placed in this "Miscellaneous Folder" until a particular correspondent becomes active, to the extent that his correspondence attains an accumulation of, say, half a dozen letters or alternatively if business is transacted with him, then he would in any case be allotted a separate folder, which is placed in numerical order behind the "Miscellaneous File." The Miscellaneous folders should preferably be tabbed in the third-fifth position.

NUMBERING THE FOLDERS. The reason for allotting a special folder to every correspondent with whom business is done is, as has already been explained, that it is advantageous to allocate a particular number for that correspondent, which is also his folder in the Ledger. This correspondence folder should

be allotted the two figures of the alphabetical position and also two figures, which indicate the grouping and consecutive number of the correspondent's folder in that particular division. The correspondent's name and number is also placed on the Index Card. In this way every active correspondent has an individual number, which can very usefully be employed for all purposes of the business and not merely for use in the correspondence files. It can be his general reference number for Invoice, Orders, etc., and also the page or rather folio number of his Loose-Leaf or Card Ledger Account.

By the adoption of this method of allocating numbers, the folio number of the name of a firm with whom business is transacted never changes. Hence, if the transactions are numerous, the staff get to know the number by heart—this incidentally economises time.

Each member of the staff and also each employee should have a folder (preferably of a special colour, so as to be easily distinguished from the ordinary correspondence folders) and hence a number, for dealing with their records, etc. It is a usual practice to allot numbers to employees for time card, pay slips and other purposes. If, however, these numbers are allotted through the main correspondence filing index, there cannot be any duplication, the names, if placed in numerical order, will automatically be in alphabetical order. Further, all record data, addresses, etc., will be in an individual folder. If desired, all the employee folders may be permanently charged out to a wages or other department.

On occasions, when the filing staff is pressed for time, a new name and number can be jotted down in pencil on the index card. Subsequently, however, it is a good plan to stick on typed slips. These slips can be multiplied so as to provide extra copies for (a) the folder which is to contain the correspondence, (b) for the ledger (two copies), (c) for the telephone index book.

The idea of the copy for the telephone index is so that the telephone operator may collect all names of correspondents, in anticipation of having to call them up.

A TRUE ALPHABETICAL INDEX CARD LIST.

An objection has been raised to the effect that though the names on each of the Index Cards are alphabetically correctly allocated as far as the first two places in the alphabet are concerned, that on the individual card itself they are not in strict Post Office Telephone Directory order. This, however, is now overcome in a method whereby metal slides are provided on the Index Card to take slips containing the names; thus, at any convenient time, the names on each Index Card can be re-arranged into their strictly correct order. The author has devised two alternative methods to attain the same end, the first of which consists of a strip of celluloid sewn, stapled or similarly attached to the Index Card, the lines of attachment being of such a distance apart as to form a slot or pocket into which the slips containing a corres-

pendent's name can be placed. The other method is the use of stitches of string wide enough to hold the ends of the slips containing the correspondence name. Thus, by aid of any of these three methods, absolute Directory order can always be maintained. The back of the Index Card should be used, in an inverted position, for a cross-index record to the names of Directors or other officials who sign letters ; or to the second or other names of a firm, in case the first name is not remembered when a search has to be made.

THE SUB-INDEX CARD.

In dealing with subjects under this method of filing, it is often found that a particular file commences to grow to inconvenient dimensions and further mixes up too many sub-divisions of the main subject. This difficulty is very easily overcome by the use of another special Index Card known as a "Sub-Index Card." This Sub-Index Card is inserted in its proper place behind the Main Index Card, and the function of the Main Index Card is merely to refer to the Sub-Index Card, just as if it were a folder. On the Sub-Index Card, a complete list of the sub-divisions of the main or root subject are entered. A two figure number should be allocated to each of these, thus the complete decimal number of any divisions of a subject will be a six-figure number. This number gives very considerable scope, and is sufficient for most businesses. Should, however, a considerable number of catalogues and technical data have to be filed, resource must be had to an extension of the International Decimal Classification System, to which reference will be made a little later on in this paper.

TABS.

The tabs on Main Guides should appear on the left, and are arranged with the odd numbers on the first-fifth, and the even numbers on the second-fifth. Red and blue tabs respectively can be advantageously used for adjacent letters of the alphabet (all sub-divisions of a letter to be of the same colour).

As a refinement, it is advantageous if the tabbed index cards have the tabs bound with metal and the lettering faced with transparent celluloid, since they have to stand a good deal of wear and tear. It is generally advisable to maintain two complete sets of files, one for the current and one for the last year's correspondence, the year previous to last being transferred to transfer boxes. As a rule, the Subject folders and also the department costing folders of last year should be transferred into the separate International Decimal Classification Filing System. It is advantageous to employ folders of different colours for this year's and last year's files. The folders should be obtained with five tabs cut on each (in, say, the last two-fifths of the width of the folder), in two sets, one sets of tabs being numbered 1, 2, 3, 4, 5, and the other numbered 6, 7, 8, 9, 0. From these numbers any desired numbers can be produced, by simply cutting off the unwanted four tabs by means of a pair of scissors. If the required

number is above "9," the number in the tens should be prefixed in ink (preferably quick drying, Indian ink), or better still, by the aid of a numbering stamp.

With this system of tabbing, should a folder be misplaced by accident, less than one-tenth of the folder tabs have to be examined to find two incorrectly placed together. In fact, it requires a very careless filer to replace a file incorrectly, on account of the fact that two similarly numbered tabs would appear together.

PLACING IN FOLDERS.

When placing letters into a folder, all pins and clips should be removed (as they bulk out the files and are apt to rust), and the last new letter attached on the top of the existing correspondence by a touch of gum on the upper left-hand corner. This will be found in practice to be more effective, quicker, and also to occupy less space than the employment of any mechanical binder. Incidentally, it considerably reduces the cost of folders, as only simple folders, without any binding mechanism (with, of course, number tabs) are required. Naturally, to expedite the gumming of a corner, a better tool should be employed than the brush and gum pot. Such a device exists on the market, in the form of a vulcanite tube of rectangular section, about one inch wide, by three-eighth inches thick, by six inches long. The upper end is provided with a cap, whereby it can be replenished with gum—the lower end is provided with a rubber sealing tongue or flap. A slight pressure of the rubber sealing flap on the paper breaks any seal due to the gum drying since the gummer was last used. This, coupled with a slight pressure of the finger and thumb on the flat side of the container, deposits the gum quickly and promptly where it is required, and that without the mess and scraping over the neck of the bottle associated with the ordinary gum brush.

When the correspondence becomes very bulky, it may either be sub-divided into tabbed folders contained within the main folder or held in a binder. The most satisfactory type appears to be that in which the papers are perforated on the left-hand side with a twin punch, and bound together with a tagged, flexible, cotton-covered wire, passing through the perforations.

REMOVAL OF FILES.

As a general rule, there is no objection to anyone removing a file of letters from the cabinet, but it should be a very strict rule that no one is to replace these files except the person in charge thereof. When a file is removed, an "OUT" card should be put in its place, headed with the name thereon of the person who has taken it. With reasonable care, there is no need to make any other record than this. When the file is returned, the card can be used for any other file that may be removed subsequently for reference by the same person. This card should, of course, be of some distinctive colour to that used for the folders, so as to facilitate getting back files, should at any time rather too many get out. It will be noted that this method avoids all clerical

entries, and thus economises time. The index card indicates the name of a missing folder.

For the purposes of many businesses, territorial groupings are often required. These are best obtained by allocating a separate colour and marking to each territory, and still maintaining the strict alphabetical arrangement. In the case of correspondence, more particularly from far off foreign countries, where it is impossible to keep letters and their replies in dated order, it is generally advisable to employ two separate files, one for the letters received and one for the replies. It is quite easy for those who wish to refer to them to open the two files side by side. An alternative method is to file the replies in the order of the dated reference in the opening paragraph of the reply letter, instead of by the actual date on which the reply was sent; in this event, the same result is attained as with ordinary correspondence, viz., the letters will appear directly in the order of the reply and the letter to which a reply is made.

It will be noticed that a very great advantage of the system which has been described, is that folders cannot be removed from the file or misplaced in the file without their absence being detected at a glance by means of the numerical check, rendered available by the aid of the numbered tabs and the register on the index cards.

FINDING LETTERS.

(a) Open the drawer containing the tenth of the alphabet required; (b) Inspect the alphabetical guide index card, and if the name sought for is there (c) take out the folder. If the name is not entered on the card, take out the miscellaneous file. If not there, refer to the cross index on the back. This process is much simpler than preliminary reference to a separate card index or to a more or less correctly-kept collection of folders supposed to be kept in alphabetical order.

SUMMARY.

It will be observed that, in accordance with the system which has just been described, folders are filed by *number* and checked by *name*, and are found by *name* and checked by *number*, *i.e.*, the line of least resistance in each case, reference to the file is directly by name. An index is not necessary for this, though essential as a check against missing folders, and to obviate the necessity of filling in anything on an "out" card (a set of "out" cards being kept on hand with the names of the persons who usually take out the folders).

Again, this method of filing has another advantage, in that it interlocks with the whole system of the office, including the counting house.

II. EFFICIENT FILING OF SUBJECT OR SPECIAL LIBRARY MATTER.

In subject, or what may, perhaps, be better termed Technical Library Filing, the same underlying principle (as with correspondence) is that promptness in filing is all important. What is required in most businesses is Technical News, NOT Technical History. Hence, the importance of getting everything filed as promptly as possible. The aim of a Technical File should be to provide what is wanted *when* it is wanted. To-morrow is too late.

Now promptness in filing calls for the elimination of all elaborate entries, indexing, mounting, and similar red-tape, time-consuming methods. At the same time, the method adopted must be such that it is possible for the data to be found immediately it is required—otherwise, the whole system is of little use. In the filing of correspondence, there is always a definite name to which to work. Subject filing has not, however, this advantage, hence everything depends upon intelligent classification. When mis-handled, a subject file can be turned into a more effective burying ground than even a correspondence file. Hence the all-important foundation of good subject filing is the classification.

CLASSIFICATION.

Those who are engaged in almost any occupation cannot but accumulate in course of time a very large and varied collection of catalogues, technical data, general information, reports, drawings, books, etc., and without some effective system of indexing, it is obvious that such becomes but a mass of detail from which it is practically impossible to extricate exactly what is required from time to time, quickly and easily. Older methods of filing, mostly dependent upon an alphabetical arrangement, are inadequate to cope with the difficulty, as either only the very general heads of the filed matter are dealt with, or else the index itself is so extensive and complicated that the prompt location of the subject required is hampered. A special fault of the dictionary method of indexing is that it presents no connected view of any subject and its collateral subjects. It is rarely properly cross-referenced. Headings are at haphazard, and worst of all, it becomes out-of-date the day after classification. In a technical file, the matter of classification is of all importance to users. A great many people think that they are perfectly competent to compose a system of their own, but, lacking experience, disaster usually occurs in a comparatively short time. Prior to the eighteenth Century, as is well known, some fifty systems of classification were devised, and since then, over a hundred more methods have been evolved. Of all these, experience indicates that for a technical file, the best system at present is an extension of the decimal classification of the "Institut International de Bibliographie," sometimes known as "Dewey Expanded," or the "Brussels Index." A good many persons are aware of important defects in the original Dewey system, and therefore have paid very little attention to the International system. So it

may be well to point out here that the changes in the International classification are so subtle and radical as to make it practically a new method. Naturally, with all the accumulated experience of the Dewey System, full advantage has been taken of avoiding or eliminating its defects. This classification is to be recommended chiefly in view of its universal use, great simplicity and uniformity, and on account of the important property of the decimal numbers, *i.e.*, that they are capable of being placed in a rigorously determined order, and that new numbers may be indefinitely introduced between any existing two, without interfering with the previously determined classification. In order to provide for the expansion of knowledge—especially in any rapidly developing field—this is an essential property of a system of bibliographical classification.

Though the system of decimal classification was originally devised and applied by Melvil Dewey as long ago as 1873, in America, to the library classification of books, and was later vastly extended and improved by the Institut International de Bibliographie for application to all kinds of classified matter, it is so elastic that it fully provides for the detailed classification of such modern subjects as Aeronautics, Electrical Engineering, Wireless Telegraphy, Electro-Farming, extensions of which the author has assisted in preparing. It is better known in America and on the Continent than, perhaps, in Britain, though it is employed by some of the principal Libraries here. It should be borne in mind that the complete International method enables any notion or combination of notions whatsoever to be written down as a decimal number, occupying a rigorously fixed position in the entirety of the number complex of the classification.

A very important feature of such a classification system as has just been described is the advantage to the user. For by it, the majority of the data on the subject automatically group themselves together. Hence the search for information on a specific subject is very materially assisted.

A considerable portion of a technical file will consist of technical papers, trade catalogues, and other documents. It is in the classification, in particular, of these, that the advantage of the International system will be most appreciated. For there is not only a need of numerous subject-matter divisions, but also it is necessary to express what may be termed "points of view," *i.e.*, the subject as related to place, time, language, etc., also cross-reference to other subjects. In a technical file, it is essential to analyse books, periodicals and other documents, in a detailed manner such as is not necessary in any ordinary library. In fact, the Technical Library usually commences its filing where the ordinary library leaves off. For this purpose, the International classification system (with its specialised extensions) is invaluable.

A short description of the system may render the matter a little more intelligible to those to whom the Decimal Classification is new.

In order to establish the series of classification numbers adopted, it may be supposed that the whole of human knowledge is represented by unity, divided into ten decimal classes, in which should appear all the subjects of intellectual activity. Each of these classes is divided into nine divisions, and each division into nine sub-divisions. This process may then be continued until the main classes are sifted down to the smallest detail on an intellectual work.

The main classes which have been established are as follows:—

- 0.0 General Works and Bibliography.
- 0.1 Philosophy.
- 0.2 Religion.
- 0.3 Sociology. Law.
- 0.4 Philology.
- 0.5 Pure Science.
- 0.6 Applied Science. Industry.
- 0.7 Fine arts.
- 0.8 Literature.
- 0.9 History. Geography.

Each one of these further divided and sub-divided to whatever extent is necessary, and as an example, one detail of 0.5 "Pure Science," may be taken: "Magnetic Compasses."

0.5 is divided in its turn, as explained above, into divisions comprising mathematics, astronomy, physics, chemistry, etc.

- .5 Pure Science.
- .53 Physics.
- .538 Magnetism and Electro-magnetism.
- .5387 Terrestrial Magnetism.
- .53874 Compasses. Regulation. Compensation.

The sub-divisions of compasses could be carried further still, by addition of another number to the right of the last decimal, and these sub-divisions could be interpolated between the divisions previously established, without interference with the original classification.

The necessity of this property to a loose-leaf book or a card index is self-evident.

In the practical application of these decimal numbers, the decimal point is omitted as unnecessary, and the decimal figures are divided into groups of two or three figures by full stops or commas, to emphasize the sub-divisions, and to aid the eye and mind; the above example will then be written:—

538.74.

The ten figures are employed for the classification numbers without distinction, and in the same manner, except that sometimes the zero gives rise to some special rules. The zero which appears at the head of the ten classes indicates general works, but the intercalculated zero is reserved as a sign of combination, and by means of it a series of numbers are formed, which comprise special tables. One group of these special tables, known as analytical sub-divisions, may be applied to any decimal number

throughout the classification, and are formed by a double zero. Another group known as special analytical sub-divisions, formed by a single zero, is applicable only to specified divisions in the classification.

The principal divisions of the first group are as follows :—

- 00.1 Speculative. Conception, Researches, and Theoretical Studies, etc.
- 00.2 Realisation. Execution. Construction, etc.
- 00.3 Economic. Industrial production. Selling price.
- 00.4 Service and employment. Working, etc.
- 00.5 Furnishing and equipment.
- 00.6 Localities and establishments. Details of organisation and service.
- 00.7 Special personnel.

These numbers express a point of view, and as an example ...00.1 applied to the chosen number would be written 538.74.001, and would imply a theoretical study or research upon magnetic compasses, whilst 538.74.004 would be the decimal designation upon a pamphlet explaining the use of the magnetic compass. Another group of numbers are formed by a single zero within brackets, the principal divisions of which are :—

- (01) Theory of the subject.
- (02) Manual, treatise, precis of ..
- (03) Encyclopedia, dictionary of ..
- (04) Conference, that is, of course, essay on
- (05) Periodical, Review of ..
- (06) Societies, institutions, congresses, exhibitions of ...
- (07) Teaching and study of ..
- (08) Collection, polygraphs of ..
- (09) Historical works on ... History of ..

These numbers can also be applied to any number throughout the classification, and express the notion of form. Thus :—

- 538.74 (02) A treatise on the compass.
- 538.74 (09) History of the compass.

Other sub-divisions which are common to the whole classification comprise (a) geographical, indicated by an integer between brackets as (42) English ; (b) linguistic, indicated by the sign =, thus, an Italian work on botany would be 58=5 ; (c) Chronological, in which the year written between inverted commas is attached to the decimal number, thus 9 (44) " 1467 " History of France in 1467.

The universal application of the system of the decimal classification to any human notion is made possible by the use of three signs, the most important of which is that of relation expressed by a colon :

Thus, salaries is represented by 331.2. The Textile industry, by 677, so that the compound notion of salaries in the Textile industry would be represented by

331.2 : 677,

i.e., seven figures and a sign to represent a phrase of five words or twenty-eight letters, and here it should be noted that the decimal number is independent of language, and denotes a notion of the mind which may be expressed in many different ways in any one language and in different languages. It may be filed by one language and found by another.

The above example may be written 677 : 331.2 in duplicate, so that if the information was sought for either in "salaries" or "textile industries," it would be found.

The order in which these numbers follow one another in a card index, for example, is the decimal order, but the special signs described above follow in the following order:—

(), " ", =, :, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Thus, for example, the series of pages bearing the following numbers would be filed in the following order:—

621.13	621.13 : 622
621.13 (02)	621.13.0011
621.13 (44)	621.13.11
621.13 (5)	621.13.24
621.13 "1918"	621.13.484

It is unnecessary to enter into any further explanation of the decimal classification, but it should be borne in mind that the complete system as developed in the "Manual du Repertoire Bibliographique Univesal" enables any notion or combination of notions whatsoever to be written down as decimal numbers occupying a rigorously fixed position in the entirety of the number complex of the classification.

It is hardly necessary to mention the value of this classification as a powerful tool of bibliographical research, as a precise and simple method for the ordering of notes, data, information upon general themes, or upon the smallest detail; but it should be borne in mind that the classification is a bibliographical and not a philosophical attempt to group the notions of the intellect, so that information once classified and put away may be found again with the least waste of time and the least mental effort.

THE PRIMARY DIVISIONS AND SUB-DIVISIONS OF THE DECIMAL CLASSIFICATION.

0 GENERAL WORKS.	16 Logic.
01 Bibliography.	17 Ethics.
02 Library economy.	18 Ancient philosophers.
03 General encyclopedias.	19 Modern philosophers.
04 General collections and essays.	2 RELIGION. Theology.
05 General periodicals.	21 Natural theology.
06 General societies.	22 Bible.
07 Newspapers. Journalism.	23 Doctrinal, dogmatic theology.
08 Polygraphy. Special Libraries.	24 Devotional. Practical.
09 Manuscripts. Book rarities.	25 Homiletic. Pastoral, parochial.
1 PHILOSOPHY.	26 Church.
11 Metaphysics.	27 Religious history.
13 Mind and body.	28 Christian churches and sects.
14 Philosophical systems.	29 Non-Christian religions.
15 Psychology.	

3	SOCIOLOGY. Law.	63	Agriculture.
31	Statistics.	64	Domestic economy.
32	Political science.	65	Communication. Commerce.
33	Political economy.	66	Chemical technology.
34	Law.	67	Manufacturers.
35	Administration.	68	Mechanic trades.
36	Charities. Insurance Associations.	69	Buildings.
37	Education.	7	FINE ARTS.
38	Commerce. Communication	71	Landscape gardening.
39	Customs. Costumes. Folk lore.	72	Architecture.
4	PHILOLOGY.	73	Sculpture.
41	Comparative philology.	74	Drawing. Decoration.
42	English philology.	75	Painting.
43	German philology.	76	ENGRAVING.
44	French philology.	77	Photography.
45	Italian philology.	78	Music.
46	Spanish philology.	79	Amusements. Games.
47	Latin philology.	8	LITERATURE.
48	Greek philology.	82	English.
5	PURE SCIENCE.	83	German.
51	Mathematics.	84	French.
52	Astronomy. Geodesy. Navigation.	85	Italian.
53	Physics.	86	Spanish.
54	Chemistry. Mineralogy.	89	Other literature.
55	Geology.	9	HISTORY AND GEOGRAPHY.
56	Palaeontology.	9 (3)	Ancient history.
57	Biology. Anthropology.	9 (4)	European history.
58	Zoology.	9 (5)	Asiatic history.
6	APPLIED SCIENCE.	9 (6)	African history.
	Technology.	9 (7)	North American history.
61	Medicine.	9 (8)	South American history.
62	Engineering.	9 (9)	History of Oceania and the Polar regions.
		91	Geography and travels.
		92	Biography.

PRACTICAL EXAMPLES.

The foregoing is, of course, but a skeleton of the complete classification, given so as to make the method clear to those who have not previously studied it. The general classified arrangement of the "Aviation Pocket Book"* is an illustration of a detailed application of the classification and the list of contents forms a summary. The original Dewey and International classifications were intended chiefly for books, but in later years, the great advantage of the principles underlying those systems for the filing of technical data and notes has been more and more appreciated. There are two British Magazines which classify all their articles on the International System, namely, *Electro-Farming* (edited by R. Borlase Matthews and published by the Electrical Press Ltd.) and *Experimental Wireless and the Wireless Engineer* (edited by P. K. Turner and published by Iliffe and Sons). The *Brown Boveri Review* is similarly classified, and other examples from abroad are *Technos* (in French), a review of current technical articles (published by Etienne Chiron, Paris), and the loose-leaves for *Lefax* technical notes (published by Messrs. Lefax (Inc.), Philadelphia).

* By R. Borlase Matthews, published by Crosby Lockwood & Sons.

Other similarly indexed publications are as follows :—

- Revue générale électrique.* (PARIS.)
Bulletin de l'Ass. des Ing. et Industriels. (BELGIUM.)
Bulletin des Ingénieurs agricoles de GEMBLoux.
Annales de la Science agronomique,
Française et étrangère. PARIS.
Le Papier. (FRANCE.)
Revue universelle des Mines. (BELGIUM.)
Revue A. E. G. (BERLIN.)
Revue A. C. E. C. (CHARLEROI.)
Bibliothèque du Cercle des Ingénieurs Polonais. (VARSOVIE.)
Forges et ateliers de constructions électriques de Jumont.
 (BELGIUM.)
Real Institute technico "Carlo dell Acqua" LAGNANO.
Recueil des travaux techniques des Pays-Bas. THE HAGUE.
Institut royal des Ingénieurs. THE HAGUE.
Société des Ingénieurs et Industriels. BRUSSELS.
Ateliers de constructions électriques de CHARLEROI.
Institut supérieur technique, LISBON.

There has been a recent edition of the Dewey classification ; however, no recent copy of the International classification is available, except for reprints of special sections (in French), as follows :—

- Manue Répertoire Bibliographique Universel de la Locomotion et des Sports.*
Manuel Répertoire Bibliographique des Sciences Physiques.
 (Both of these are published by the Institut International de Bibliographie).
Manuel Répertoire Bibliographique de l'ingénieur. (Published by Etienne Chiron, Paris).

SPECIAL EXTENSIONS

have been carried out by the author in conjunction with others, to meet his own special needs, as follows :—

- Electrical Engineering.*
Materials used in Electrical Engineering.
Aeronautics.
Electro-Farming.

Unfortunately, with the exception of Aeronautics and Electro-Farming, they are not available to the public.

A wireless extension has been started in America and improved in England by Mr. P. K. Turner, and published in *Experimental Wireless*.

PRACTICAL APPLICATION.

The organisation of extensions for a branch of industry which has not already been so provided is, it must be admitted, not an easy matter. It takes a good deal of patience and time to attain a clear understanding of the underlying principles of the classifications that have just been described. On the other hand, the

utilisation of a classification that has once been formed is quite a simple matter. Anyone can learn how to find data, though it takes a certain amount of care and intelligence to file it.

THE MECHANICAL FILING OF THE DATA.

The method that can best be recommended for filing data is, of course, ball-bearing vertical filing cabinets. Where the use is not sufficient, it is a good idea to employ cardboard boxes, which can be stood on end like the familiar transfer filing cases in use in most offices. These boxes fold flat until required, when they make containers measuring about $10\frac{1}{2}$ ins. by 11 ins. by $2\frac{1}{2}$ ins. Their cost is about 3d. each, and they are a commercial standard, though not intended for office use. As the cost is low, a box can be allocated for each main subject. When the box becomes full, the contents should preferably be reclassified, thus starting a new case with a new decimal number, and at the same time facilitating reference. In this way, a search will usually be restricted to one case, which generally expedites matters.

If a subject cannot be readily found from the index, a reference to the classification will soon localise it, i.e., extra assistance is provided over ordinary classification systems.

THE MATERIAL FOR FILING

is often very varied, and may consist of anything from a news-clipping to a drawing. It is a good plan to stick (by one corner) small papers (*e.g.*, news-clippings) on to sheets of cheap paper of quarto size (say, costing 10d. to 1s. 0d. per ream). This makes the handling easier and avoids loss. For the purpose of facilitating the gumming, use a rectangular section gumming pencil, such as has been described earlier in this paper. Alternatively, a gumming machine, though more expensive, is more effective. For trimming, cutting, etc., a cutting machine of the Merret type (which leaves both hands free) will be found most useful, as an absolutely straight cut is attainable, and less time is occupied than is required to use scissors.

The snag in all classified systems of filing is that a subject (unless it can be obtained in multiplicate) can only be physically filed in one place. The International classification system minimises this trouble to a great extent; but subjects always seem to arise which can be treated from two or more points of view. The practical method of dealing with these is to write out a cross index on a sheet of quarto paper, and then place this sheet in the case, which is of slightly lesser importance.

In the case of catalogues, usually it is very little trouble to obtain several copies, or even to dissect multi-subject catalogues. Cuttings from magazines and journals are often a trouble, in that the end of one article finishes on the front of a page, while another article starts on the back. This can be overcome by the purchase of duplicate magazines or cross reference by means of sheets of quarto paper, as mentioned above. The ideal way is to obtain

duplicate copies. Then mark all the odd pages of one copy with a diagonal line, and all the even pages of the other copy with a similar diagonal line. When the bindings are cut, it will be appreciated that one complete copy of the magazine is available, all appearing on one side of the page (the backs being cancelled). This method avoids any confusion and consequent omission of a page forming part of an article.

With the exception of the *Journal Technos*, editors do not seem to anticipate the needs of the subject filer, and print their journals on one side of the sheet, though a very few (*e.g.*, *Electro-Farming*) endeavour to print advertisements on the back of the subject matter, which is almost as good as providing blank backs to the pages.

Instead of keeping and binding old magazines, it is a wiser and more useful plan to cut them up, as has just been indicated.

It is not so generally appreciated as it might be, that a subject file is for the benefit of the users, and that users appreciate the fact of all the information they require being ready collected together in one place. It is a far better method than searching through indices and then having to turn up pages.

Often, of course, matter is filed that will never be used ; but on the other hand, frequently matter is collected by chance that eventually becomes invaluable.

Though magazines, newspapers, clippings and drawings have been mentioned, often the most valuable feature of a subject collection is the data of the business itself. This material is very difficult to collect, as too often it is contained in the heads, or put away in the drawers only, and not thought worthy of writing down until it is too late. The incorporation of the subject copies of the correspondence often means that many such points are rendered available.

The use of Journals which review current technical literature, and also decimally classify it, are of considerable assistance to those responsible for the filing.

As technical data comes to hand for filing, it should first of all be rough sorted into, say, five or ten divisions (one being allocated for Miscellaneous or subjects which are difficult to classify quickly). This facilitates placing into the cases. Very often, it will be found more convenient to mark much of the data with its appropriate classification number before filing.

Where the staff can be trusted not to appropriate portions of the contents of a case, it is usual to issue a complete case at a time for reference. An "out" card, bearing the name of the borrower, should be placed in the vacant space. If a number of outcards are available, with the names of the authorised borrowers ready written thereon, no writing is needed.

If any data is taken out of a case, it should be marked with the decimal classification number, to facilitate re-filing. It should further be wire-stapled into a temporary folder.

SUMMARY OF SUBJECT FILING.

It will be appreciated, from the foregoing description, that even though the classification may seem somewhat formidable, a most useful subject filing system is provided. Its soundness lies in the fact that it is a time-tried and tested method.

Though a subject may be filed from one point of view, at a later date it can still be found, even though then sought for from a different point of view. The main index has been compiled as the outcome of years of experience. A peculiarity of the whole system is that the classification and index are in being long before it is known what data is going to be filed. Hence, at the time of filing, the index has not got to be added to. All this facilitates both that rapid filing and quick finding which is so important.

III. THE EFFICIENT MECHANICAL FILING OF MAPS AND PLANS.

Recently, vertical filing has been applied to the filing of large flat sheets of paper, such as maps and plans. Drawer filing has many objections which are well known, though for lack of a better scheme, this method has perforce had to be adopted.

Hitherto vertical filing, though it occupied much less space, has not been feasible, as the sheets all slipped down to the bottom of the drawers or cases. Now, however, vertical filing cabinets are available, due to the ingenious idea of making the separate card-board sheets in a double form, and mounting metal helical springs between these double cards, so as to produce a distributed pressure over all the surface of the card, just as if each drawing were held in place by a number of hands.

IV. THE EFFICIENT INDEXING OF MAPS AND PLANS.

One of the great difficulties in consulting large sheets, such as maps and plans, especially in the open air, on a wet day, is their awkward size. Another trouble, especially with maps, is that one seems to be so often working on the edge.

To overcome these objections, the author has devised a novel method of easily dealing with these big sheets, which is (to use an Irishism) by cutting them up into convenient size for handling. Two copies of each sheet are taken, and, commencing with the upper left-hand corner, one of the sheets is cut up into squares of any convenient size, say, ten inches. The duplicate sheet is also cut into squares of similar size, but the squares are so cut that they start half the size of the standard small square in and down (say five inches each way). In this way, any square taken from either sheet will be found to contain four adjoining quarters of squares on the other sheet. Each square should be marked with a diagonal diamond, by drawing lines from the centre of each side to the centre of each of the sides of the diamond; a reference should be given on each of these diagonals, to the number of the adjoining

square on the other sheet, of which it forms a quarter. Also, numbers should be inserted at the points of the diamond, to indicate the adjoining squares of the same sheet at these points.

In practice, it will be found that if, in using a square, it is desired to work towards one of the corners, the working position can be restored to the central portion by referring to the sheet square, whose number is indicated on the diagonal line. Thus it is always possible to operate in the centre of one of the small sheet squares, which is a very great convenience.

* A very handy way of marking the sheets before cutting them up is to employ a hot transfer sheet of thin paper (such as used by dressmakers), ready marked with the squares and references to the adjoining squares. In the case of blue prints, an additional tracing, bearing these markings only, can be placed in the printing frame at the same time as the tracing which is to be printed. It is very convenient, in conjunction with these small squares, to have also available a photostat, or reduced scale drawing, of the same size as the squares, to act as a small scale key or guide.

Of course, the complete sheet can be reconstructed at any time, by placing all the squares in order of number, on a large flat surface. However, with the aid of the key, this rarely will be found to be necessary.

V. IN CONCLUSION.

There is a golden rule which, though somewhat hackneyed, is of all importance in the art of filing, and that is

DO IT NOW,

for the all-important feature of a business file is that it must be up-to-date.

Above all things, avoid being a slave to a system. One should always be its master. A good system should be sound enough to be adapted to the individual requirements of any particular business. Efficient Filing is that method which will stand the crucial test, as to whether it is easily understood, economical in time, material and apparatus, speedy and accurate in operation, and whether it will, without fail, produce the documents required for reference in a minimum of time. It must incorporate the features of simplicity, ready reference and flexibility.

It is hoped that this paper will have done something in the way of acting as a guide in the attainment of the ideal to which reference has been made. This paper opened with a paraphrase, so let it conclude with another, which may possibly serve as an inspiration for many a business and library, "SAFE FILE, SAFE FIND."

FOURTH SESSION - - - *Saturday evening,
September 26, 1925.*

Chairman :

Dr. R. S. HUTTON.

BUSINESS MEETING.

Dr. R. S. HUTTON : Our Chairman being absent on other business, and our Honorary Treasurer being unfortunately unable to be with us this evening owing to illness, I have been asked to give you a brief report on behalf of the Standing Committee that was appointed at the First Conference at Hoddesdon.

In the first place I have to announce that the Standing Committee has approached the Carnegie United Kingdom Trustees with a view to trying to secure financial support for carrying out the objects for which the Committee was appointed. The Carnegie Trust considered the case, and most generously provided the sum of £750 per annum for two years. That sum was based on an estimate—I think you will agree a modest estimate—of what the Standing Committee thought would be required for the initial launching of the work, though the Committee has had continually in view the placing of the movement on an entirely self-supporting basis. The Standing Committee next arranged for the publication of a detailed Report on the Hoddesdon Conference, a piece of work that was duly carried out, almost entirely under the direction of Mr. Arthur Ridley, our Honorary Secretary; being done in his spare time and under very difficult conditions, he had a rather big task. The Report was distributed to all those who had attended the Conference, and to a large number of other people who were interested.

The next step taken by the Committee was to arrange for the organisation of the work before it by seeking a Secretary, and after considerable search we were fortunate in securing the help of Mr. Keeling; a suitable office under excellent conditions has been secured in London by arrangement with the Textile Institute. Altogether we feel that thoroughly satisfactory provision has been made for carrying on the work in the simplest and most efficient way for the time being.

Last year we called ourselves the First Conference on Special Libraries, and ordinarily we should, perhaps, be calling ourselves to-day the Second Conference on Special Libraries, and so on; but, when it became necessary to carry through certain business affairs—matters of £ s. d., letter-headings and so forth—we had to think of a rather simpler title. Thus it was that we ventured—I say ventured because we did not then realise perhaps all that it might entail—to call ourselves the Association of Special Libraries and Information Bureaux. You will, however, appreciate that the change is but a nominal one.

The immediate task before us is to get a clearer idea of the different bodies and organisations which might be said to come within the sphere of interest of this Association. We had at our First Conference 85 visitors ; over 200 have expressed their intention of attending our meeting on this occasion, and almost every day we are hearing of other groups of people interested in this movement. Although we are all surprised to find the variety of interests represented here, we have by no means yet gauged the full extent of our sphere.

We want to proceed with the preparation of a directory of special libraries and information bureaux. A nucleus list has accordingly been hurriedly prepared (and here again we are greatly indebted to Mr. Ridley) for circulation amongst you. Incorrect though it may be in a number of ways, it represents a first attempt to indicate something of the field, and it is primarily with this object that it is being handed round. We should greatly welcome any suggestions as to additions or corrections. The list is intended to be used as a basis for the directory ; the directory itself will not be a mere list of names, but will give concise particulars regarding each entry.

The Committee has spent a good deal of time in considering the kind of information it would be desirable to collect. It has drafted and re-drafted the form asking for particulars which we would like to include. A proof of this questionnaire accompanied by three specimen entries has been circulated, and on these we should be glad to have your views.

We have given as an example of a scientific special library, the Imperial Bureau of Mycology at Kew ; as an example of an Institutional special library, that of the Chemical Society ; as an example of a Works special library, that of Messrs. Rowntree & Co. Ltd., of York.

You will remember the very friendly greetings from the American Special Libraries Association with which we were honoured this morning. In addition to the splendid set of specially bound volumes that they have been good enough to present to us, we have received copies of the new editions both of their " Special Libraries Directory " (1925) and of their " Commercial Information Services Handbook " (1924).

As many members of this Conference are no doubt aware, the Board of Education has appointed a Departmental Committee known as the Public Libraries Committee, the terms of reference of which are " To enquire into the adequacy of the library provision already made under the Public Libraries Acts, and the means of extending and completing such provision throughout England and Wales, regard being had to the relation of the Libraries, and to the general system of national education." The Standing Committee of this Association has received an invitation to give evidence before that Committee, and this they have gladly accepted. We propose to put forward briefly some facets of the problem as seen from the library users' point of view. Our evidence has to be sent in almost immediately—so that if there are any suggestions that members of

the Conference would like to make in this connection, we should like to receive them either verbally or in writing, without delay.

I have left almost till last one of the most important matters with which the Committee has had to deal; we were instructed to approach any outside bodies that might be of interest or service to us. Shortly after the Conference we got into touch with the Library Association and a meeting was held in London at which a very friendly reception was accorded to our delegates. After an exchange of views the Committee decided to seek Institutional Membership of the Library Association, nominating our Secretary, Mr. Keeling, as our representative; in this capacity he attended this year's Conference of the Library Association at Birmingham.

Quite recently, our attention having been again drawn to this matter, the Standing Committee has been considering anew the possibility of closer collaboration with the Library Association. The Committee at the present time has an open mind on the question of linking up in some way with the Library Association; but would welcome an opportunity of discussing the matter again with representatives of the Council of the Library Association.

This afternoon reference was made to a suggested panel of translators; we realise that to build up an effective list or panel is quite a big task; in industrial and scientific circles, it should prove extremely useful to know precisely where to turn for the services of really reliable translators who are themselves experts in the subjects that require to be translated.

I shall be very pleased, on behalf of the Committee, to try to answer any questions which may be raised on this Report.

Mr. HAROLD E. POTTS, M.Sc.: On looking down the list of the members of the Conference one is very much struck by the diversity and importance of the organisations represented; there are, however, a few members like myself, who are present in a purely individual capacity. Many of the members here, especially those representing scientific societies, are engaged in the manufacture of information; the librarians are engaged in its distribution; we are interested in your work primarily as consumers.

It would like to suggest to the Committee that they consider an arrangement by which the users or consumers of information can join as members of the Association on a subscribing basis.

Dr. R. S. HUTTON: I am glad that Mr. Potts has raised that point. I should have explained that our "Association" exists really only in name, except for the control exercised by your Standing Committee; no basis of incorporation, bye-laws or even regulations have been prepared as yet. It would seem to be premature, at this juncture, to attempt to define conditions of membership or subscription rates, though I, for one, feel that we shall soon have to consider ways and means of making the Association self-supporting. It is ridiculous to think that for our ordinary everyday purposes we should not be able to raise quite a good fund if we are going to have the attendance and support of

visitors such as we have on this occasion ; but I do not see that we can well proceed until we have decided precisely what form of constitution we are going to adopt ; we hope to have something definite to report in the course of the next few months, when those interested will probably be called together in special meeting.

Mrs. DUGDALE (League of Nations Union) : I should like to ask whether in the year that is coming the Association will consider developing a little more the information bureau side of its work. The title shows that special libraries and information bureaux are considered to be different things, as indeed they are ; but I think the emphasis has been laid almost exclusively at this Conference upon the special library side of the work. While this has been most interesting, I myself must admit that I am a little disappointed ; I had hoped that we might have had more discussion about the duties and development of bureaux giving intelligence on current affairs—information of a character entirely different from that to be got from printed books. I might have learnt something of other information bureaux which are worked on the same lines as my own. We know scarcely anything about each other's activities, and I should be very glad if the Committee would consider whether that side of the work could be a little more stressed now that our organisation is developing.

Dr. R. S. HUTTON : I can assure Mrs. Dugdale that many of us are much more concerned and interested in information bureaux than we are in libraries ; at any rate, our daily tasks take us more along those lines. I hope she will not go away disappointed, since there will be many other opportunities on our programme for further discussion on the points she has raised.

Mr. H. I. LEWENZ (Editor, British Section, Schlomann-Oldenbourg Illustrated Technical Dictionaries) : Would it be too much to ask on what lines it is intended that information bureaux should be developed ?

Dr. R. S. HUTTON : I hope that Mr. Lewenz does not think that we, as an Association, have as one of our objects the development of information bureaux. I anticipate that the Association will wish to function as an information bureau of information bureaux, rather than a sort of super-information bureau answering questions to the world at large. We certainly hope to mobilise interest in the subject of the handling of information, and try and tackle some of the problems common to a number of information bureaux.

Mr. H. ROTTENBURG, M.A. (Engineering Laboratory, Cambridge University) : For my information in filling up one of these forms, I should like to ask exactly what constitutes a special library. What, for example, is it that constitutes the public library at Huddersfield a special library devoted to cricket ?

Mr. A. F. RIDLEY (British Non-Ferrous Metals Research Association) : I think Mr. Rottenburg's information is probably as vague as my own on that particular point ; we have, however, from a

well-known reference book secured the fact that at the Huddersfield Public Library they have what is supposed to be a more than usually complete collection of books on the subject of cricket.

Mr. J. T. WALTON NEWBOLD, M.A. (Labour Research Department) : I want to draw attention to the absence again this year of any direct representation of the dozen or so Commercial Libraries in United Kingdom ; in addition to these we ought to endeavour to increase the representation from the libraries of social, as distinct from natural science, and from libraries like the John Rylands. I rather feel that in the nature of things this Association is tending to think in terms of librarians' interests and the interests of technical science. That is good, but we want something wider than that.

Dr. R. S. HUTTON : May I proceed to the next item on the agenda, which is the election of the Committee and the appointment of Officers—a matter which is, of course, entirely in your hands.

Brig.-General MAGNUS MOWAT, C.B.E. (I.Mech.E.) : I beg to propose that the present Standing Committee be re-elected, with power to add to its number.

Mr. R. BORLASE MATTHEWS (Consulting Electrical Engineer) : I should like to second that.

Brig.-General MAGNUS MOWAT : I think we all feel that we should incorporate in this resolution which has been moved and seconded, the best thanks of the meeting to the Committee for the very difficult work they have already done. (The Resolution and vote of thanks to the Committee were carried with acclamation.)

Mr. E. WYNDHAM HULME (Library Association) : At this end of the table we are lost in admiration of the excellent work that has already been put into this list of special collections. It ought to have been done years ago by the Library Association. I see you have excluded the subject of Topography at present. Some years ago Mr. Stephen, of Norwich, and I decided to publish a similar handbook. After a little our difficulties seemed to increase ; but we did consider it very carefully. I do not want to tell you too much of the difficulties, because I think you will encounter them. They do arise very largely in connection with the special collections in the larger libraries, the British Museum, the Bodleian, the National Art Library and so on. I shall be very pleased to place all the information I have on local collections at your disposal. The printed forms show in detail the size of the collections, the numbers of maps, photographs, etc. These local collections are, of course, very numerous, very valuable, and, I think, to a very great extent unknown and unused by the general public. I do trust that any difficulties which may arise in the compilation of your list will not deter you from going on and publishing it at the earliest opportunity. I am sure it will be very soon out of print, and you will need a revised and enlarged edition.

Mr. J. MENKEN (Business Research Association) : With regard to the compilation of a list of information bureaux, it

occurred to me that one point of difficulty might arise when you enter on the commercial field of your labours. I observe that on the whole the special libraries which are mentioned in this preliminary list are not profit-making institutions; although they may make some small charge for the services they render, I take it that service on the whole is rendered simply on the basis of cost. I suggest, therefore, that a point arises as to whether profit-making concerns could be mentioned in such a list as that contemplated. On the one hand, many firms would be glad to know where they could get information, such as profit-making concerns supply, and on the other hand some of the libraries represented here might not care to have such businesses mentioned in the same directory as themselves.

Mrs. DUGDALE: May I suggest that the list of the information bureaux should be issued separately from that of the special libraries.

Mr. R. BAXENDALE (L.M.S. Railway, Euston): This Association is to be an Association of special libraries, but I see the list includes a number of public libraries possessing special collections. Will these public libraries be entitled to membership of a special libraries association?

Dr. R. S. HUTTON: I hope the answer to this difficult question will appear in due course.

Mr. L. STANLEY JAST (Library Association, etc.): May I take this opportunity, Sir, of referring to the remarks you made in the course of your report regarding the possibility of some form of collaboration between this Association and the Library Association. At the Birmingham meeting of the Library Association held last week, Mr. Ridley read an admirable paper giving a general outline of the objects and the aims of this Association. A discussion took place, and there was a very definite feeling amongst the members present that if possible it would be good that two distinct associations, overlapping to a certain extent, should not be formed. The feeling in the Library Association was that there would be great advantages in some form of amalgamation which would be satisfactory both to the existing Library Association and to the members of this Association. There are several examples of what has occurred in cognate fields. There is, for instance a general Chemical Society, but subordinate chemical societies have been formed to cover special fields. A very definite effort is now being made to bring those societies together again.

It would be a pity if the same sort of thing happened in the much more restricted library field. It appears to us that general librarians would benefit considerably by association with the special librarians and other members of this Association who are concerned in one way and another with research work; it might be desirable for you too to have some association with librarians who are covering a more or less general field. Apart altogether from the general advantage of unity, there would probably be economic advantages in the way of office accommodation, office administration, and so on.

I was requested officially by the Library Association Conference at Birmingham to say to this meeting of the Association of Special Libraries that the Library Association would welcome any suggestion for some form of co-operation. It would probably entail modifications in the present constitution of the Library Association ; the Library Association would, however, be prepared to make whatever modifications might be necessary, to avoid, if possible, the existence of two associations. The Library Association is a chartered body. That is rather a point, because the Privy Council will not recognise two bodies both operating in the same field. The charter of the Library Association is sufficiently wide to include all the objects of the Libraries Association. Already there are in our membership librarians of every type. The public librarians happen to be the largest in number—I do not say they are the best in quality. There are a considerable number of university librarians, librarians of learned societies, and a great many special librarians in your limited sense.

I was very glad to hear, Sir, that your Committee has decided to explore the position, though without, of course, committing yourselves in any way.

I ought, perhaps, to add that at the time when I was appointed by the Library Association to come here and say this, it was not anticipated that our Honorary Secretary would be able to be present.

Mr. F. W. CLIFFORD (Chemical Society's Library) : Some years ago in every science special societies were started ; now these societies are all trying to come back into centralised organisations and are finding innumerable difficulties. I hope this Association will not do the same thing.

The Library Association is not a society of librarians or associations ; it is an association of libraries, and I am very glad that Dr. Hutton has said that there is some chance of co-operation and closer union. I do not want to have to attend two conferences ; I do not see why we should not have one conference. There is the British Association, with its hundred and one interests all meeting together amicably ; and I do not see why we should not do the same right from the outset.

Dr. R. S. HUTTON : We appreciate the kind remarks which Mr. Jast has made, and the message he has brought us, and Mr. Clifford's supplementary remarks. In view of your re-appointment of the Standing Committee, I hope you will leave the matter of negotiation with our friends in the Library Association to the Committee.

Mr. FOSTER SPROXTON (British Xylonite Co. Ltd.) : This nucleus list is excellent, and I think everyone is delighted with it. Would it not be worth while to circularise all the members of the conference asking them for further information.

Mr. F. B. LAWLEY (Independent Labour Party Information Committee) : Will some guarantee be given before any definite

step is taken in the direction of amalgamation with the Library Association that the information bureaux as distinct from the libraries, whether public or special, shall be consulted? Their interests are, perhaps, somewhat different from those of the special libraries as such.

Dr. R. S. HUTTON: I am sure the Committee feel that before very long it will be necessary to set our house in order, either as a semi-detached or as a detached structure. We obviously cannot wait another twelve months for that. There must be some means of sounding members of the conference; we must either call together a business meeting at adequately long notice in some hall say in London, that is big enough to hold us, or take a postal vote, putting a definite question to all those participating in this conference, together with those who participated in the first conference and thus helped to set the ball rolling.

It has come to the notice of the Committee that some of those present would like to put forward suggestions regarding future conferences. If those suggestions can be made in writing, of course that would be in order; otherwise they might be briefly put before us now.

Mr. H. ROTTENBURG: During the discussions various tentative proposals have been made, for instance, a suggestion about the registering of new words. We are in Oxford, and Oxford is the home of the Oxford Dictionary; could this Association approach the Oxford University Press and enquire whether they would be prepared to receive from people in this country new words which they happen to find it necessary to coin?

Dr. R. S. HUTTON: I think Mr. Rottenburg's question certainly ought to be referred to the Committee.

Mr. H. I. LEWENZ: May I propose that when the Committee has progressed sufficiently far, a constitution should be drafted and sent by post to members, asking for comments: and that they should then decide whether a meeting is to be held or what is to be done?

Professor GILBERT MURRAY: May I suggest that the postal vote would be an extremely inconvenient way of deciding upon a thing like the constitution of the society? In a postal vote you have got to say "Yes" or "No" without hearing the reasons: you have no chance of being convinced; I think, moreover, that you would lose a certain number of members whom you might have retained, and that you would start with much less harmony than if you called a business meeting when you are ready, and then, after a free discussion, took a vote at the meeting.

Dr. R. S. HUTTON: May I take it that that is the wish of the meeting and that when we are ready to put any large question of principle before our delegates, we should summon a meeting and take their views? (AGREED.)

THE PRESS IN RELATION TO INFORMATION BUREAUX AND SPECIAL LIBRARIES.

By F. E. HAMER

(Benn Brothers Ltd.; Editor of "The Chemical Age").

THE LIBRARY AND THE NEWSPAPER.

The first point to be frankly recognised is that the standpoint and the function of the journalist are widely different from those of the librarian—as different, in fact, as the varied publications of the one are from the ordered index or catalogue of the other. Both the Library and the Newspaper, and therefore the librarian and the journalist, have a common interest in the collection of knowledge, in the distribution of knowledge, and especially in making knowledge as readily accessible as possible to those who require it. But they diverge widely in their scope, their spirit, and their methods; and what the one calls "knowledge" the other calls "news."

THE PRESS POINT OF VIEW.

The daily journal, for example, covers in a fashion the whole range of human interests. A large proportion of the contents of a daily journal is read once and finished with. And yet even in these rapidly produced and rapidly moving pages of contemporary history, there is much of more than ephemeral interest: facts, events, opinions, articles, reports, contributions to current controversies, of which there may be no record elsewhere, of which the statesman or business man is compelled to keep note, and which, a few years hence, may be invaluable to the student of history if he is to recapture the spirit of the period.

It will be seen that the Library and the Newspaper, although they touch at so many points that neither can safely ignore the other, are governed by different standards and aims. The Library is concerned with facts of permanent interest, from which all irrelevant matter has been carefully strained. The Newspaper is a net of much wider mesh, which freely lets through what is of no abiding importance, but yet retains many things that the historian or the student may not miss without risk of loss.

THE GOVERNMENT AND THE PRESS.

How lamentably lacking even the Government was up to a few years ago in the recognition of the profession or art of responsible news collection was shown in the Defence of the Realm Regulations, in the drafting of which the very existence of such a thing as the Press was so completely overlooked that absolutely no distinction was drawn between the worst type of enemy spy and the best type of accredited newspaper correspondent, acting under the direction and authority of a responsible head and subject to the censorship of the Press Bureau.

LESSONS FROM AMERICA.

Very close and intimate relations exist between the Department of Commerce in Washington and the Associated Business Papers

of America, a very large and powerful organisation of all classes of trade and technical periodicals. Just three years ago I attended the annual convention of this body in New York, and afterwards visited Washington and other centres with the President of the Editorial Section. For some time, I found, it had been the practice of Secretary Hoover to hold monthly conferences in Washington with the technical and trade journal editors. There were no preliminary vows of secrecy and very few formal regulations; the Secretary for Commerce followed the one safe rule of trusting to editorial honesty and discretion, and like most public men was able to testify that he had never been let down.

On the one side, the Minister of Commerce has the advantage of a very widely spread service of intelligence officers, in the closest touch with American industries, and the benefit of their frank and friendly criticism of any new proposals or regulations. He obtains in advance a fairly accurate idea of the reception his schemes may expect, and in that way gets over the first stage of his troubles. On the other hand, the editors are kept informed of the inside point of view, and are able to see to an extent what would otherwise be impossible, the reasons behind departmental policy. It means a better-informed Ministry of Commerce and a better-informed press and public. So far as I know there is no approach to this system of exchange of views in this country, and the Board of Trade, I fear, would regard the introduction of such a system with a certain degree of coldness.

AMERICAN BUREAUX PRESS SERVICES.

Another practice bearing more immediately on your movement is that of issuing, free of charge, valuable reports of investigations undertaken by bodies such as the Bureau of Mines, the Bureau of Standards, the Bureau of Chemistry, the Nitrogen Fixation Laboratory, and so on.

A very liberal service of information respecting the results of these investigations is issued regularly to the press and I believe to commercial firms. It is the practice to prepare a short summary which serves the purpose of a news paragraph and in the more important cases to forward the complete text of the report. I have published a large number of these reports, either in paragraph or in longer form, and have been surprised at the numerous inquiries for fuller particulars.

So far as I know, we have nothing at all like such a service in this country, with the possible exception of the Department of Overseas Trade, which does honestly try to help inquirers to the best of its restricted resources.

NEWSPAPER OFFICE AS CLEARING HOUSE.

I gather your Association is not to be a depository of universal knowledge, but rather a clearing house, which, without supplying the actual information, puts the inquirer on the right track. It is here, perhaps, that your movement is most completely in accord with newspaper practice. The belief in the omniscience of the

press is, of course, flattering ; it is frequently pathetic, and at times decidedly embarrassing. The inquiries are of the most varied and unexpected character, and indicate the surprising degree to which even well-organised concerns of large dimensions and skilled intelligence have no notion where to turn for information—often quite commonplace—concerning their own business.

The methods of filing information for meeting such inquiries vary, no doubt, with different offices from elaborate card indexes to the most elementary arrangements, but often what really saves the paper is the newspaper man's habit of using his wits and imagination to meet an emergency.

RESEARCH LIBRARIES AND TECHNICAL JOURNALS.

Having partly disarmed criticism by the frankness of the earlier admissions as to the limitations of the press, one may venture now to inquire what is the value of the technical journal from the information bureau or special library point of view. The value will vary, of course, with the character of the journal and the field it covers, but it is fairly safe to say that even a poor journal dealing with the affairs of a technical industry could not be entirely neglected by the librarian without risk of missing something really important. Nor can the research librarian exclude such a daily journal as "The Times," with all its official announcements, or such scientific articles as those Sir Robert Bruce publishes regularly in "The Glasgow Herald," or such informed reviews of current scientific development as Professor Nash's recent contribution on coal and oil research to "The Birmingham Post." The value, again, varies with the skill of the librarian in detecting some potential interest in what at a first glance might seem entirely without value. My experience is that the really large, successful, and progressive firms treat the research library as an indispensable part of their organisation, and spend money liberally on ensuring its efficiency.

In large organisations and business concerns you would probably find the technical library and general intelligence organisation at a very high level, but I fear that our smaller firms have much yet to learn about the value of informational services and the right use to make of technical and trade information. Judging from my own experience, I should say that the American firm gets far more value out of technical publications than most British firms do, because its watch for new jumping-off points is more alert and systematic.

The position may be finally summed up in a few simple conclusions :

1. That the press must be regarded as an essential part of any national informational service.
2. That the research and especially the industrial works library, which does not include current publications in its scheme, runs the risk of missing information often of vital value.

3. That apart from published matter, the newspaper office is already a widely recognised clearing house and liaison agency for public informational purposes.
4. That for these reasons the closest co-operative and supplementary relations should be encouraged between your Association and the press of all classes.
5. That Government departments and the public services generally would appreciably increase their usefulness by a more liberal recognition and practice of the principle of publicity.

THE LIBRARY OF A DAILY NEWSPAPER.

By E. CLEPHAN PALMER ("The Daily News").

Every daily newspaper has a library, and this library is one of the most vital departments in the office. It is not an ordinary library, inasmuch as the books in it are of comparatively minor importance. In the library of the "Daily News," there are about five thousand books, and about two million newspaper cuttings. These cuttings are put in envelopes, which are arranged alphabetically under subjects, and in each envelope as a rule there is a whole series of sub-envelopes. Every day in a newspaper office a staff of about four are engaged in cutting out things which are considered likely to be of permanent interest; these cuttings have then to be pasted on pieces of paper and put in their proper envelopes. The essence of such a library is that it should be up-to-date; and as soon as the evening papers are published they are cut up by the staff and put in the proper envelopes.

The ordinary experience in a newspaper office is that it is very seldom necessary to go outside the office to find out anything that is needed. All you have to do when you want to discover some fact is to ring up the library on the office telephone. There are times when a visit is paid, say, to the reading room of the British Museum, or to the Guildhall Library, but such occasions are very rare indeed.

It might interest you to know the kind of questions which the newspaper library is expected to answer. I have put down a few fairly typical ones: "When did Lloyd George open his first land campaign?" "How many prisons have been closed in the last twenty years, and where?" "How much money has been lost on Government Small Holdings in the last two years?" "When did Lord Oxford first use the phrase, 'Wait and see'?" "When did the Poet Laureate publish his last poem?" "Was Mr. A. J. Cook ever in the Salvation Army?"

The questions sent up are usually in very abbreviated form. A typical question from a sub-editor consisted of the two words "Lambeth Appeal"; the man in charge at the library knew quite well what the sub-editor wanted to know. There are, of course, more important and more difficult questions which often mean a long search in Government Blue Books and White Papers.

Before I came here I went up to the library and quite casually started to look at the cuttings that were arranged under the letter "G"; this is a typical selection: "Greece, Albanian Frontier"; inside that particular envelope there were some cuttings dealing with the work of the Inter-Allied Commission in settling the Albanian frontier. The next envelope was labelled "Greatest Men"; in this I found an article by Mr. Arnold Bennett, published in the "Daily Express," in which he gave a list of the six greatest men in this country, which, somewhat naturally included Lord Beaverbrook. Other cuttings were: "The Twelve Greatest Living Chinese"; "The Three Greatest Men in the World," by

Mr. Ford of America (I was sorry to notice that the three greatest men were all Americans). The next was headed, "Great Whale Island"; this was headed: "Island Kingdom for £4000. Robinson Crusoe in a Silk Hat. South Seas Mansion with Electric Light"—all apparently referring to one of the Bahama Islands. Other cuttings were headed: "The Great Seal"; "The Great Auk"; "Gravitation" (this was a message from New York, headed, "Improving on Sir Isaac Newton; Cause of Gravitation Discovered"). The next was "Grave Diggers versus Undertakers"; this was a message from a Portsmouth correspondent, reading "Undertakers' Half Holiday. A recommendation came from the Portsmouth Town Council yesterday to prohibit funerals on Saturday afternoons. Councillor Blank, who is an undertaker, pressed the matter very strongly." From grave-diggers you go to grasshoppers; then comes a bulky envelope headed, "Government Officials," where you find the numbers of the staff of every Government office, a few caustic comments on limpets, and so forth. From this you will gather some idea of the ground that has to be covered in a newspaper library.

Another important department of the library is the system of indexing. Every day someone has to read the whole of the "Daily News" and index nearly every thing that appears in that paper. For instance, you find under "P"—"Paget, Pamela: to marry Lord Glenconner," and the date on which that paragraph appeared in the "Daily News." The next item is, "Paget, Lady V.; Millinery Business Registered as Private Company." There is a cross-indexing system, so that if you did not know the name, say, of Lady Paget, but were interested in how many society people had gone into business you would look up in this index "Business" and find the sub-heading "Society people in." Under the heading "Oil" you will find sub-headings, "American," "From Coal," and so on.

It may interest you to know that one of the most vital departments in the library is that which deals with obituaries of people who have not the slightest intention of dying, but whose obituaries have to be written in good time. In one of the older London papers there are no fewer than three thousand columns of obituaries all ready in type with the headings complete, waiting for these unfortunate people to die.

In our library we are already preparing for the next war. There is an envelope marked "War—Next War," containing a number of cuttings giving details of what weapons will be used next time, and further details of the horrors in store. Under the heading "Robberies," you get "Cat Burglars" and "Motor Bandits." Personal cuttings are equally up-to-date; for instance, yesterday evening after the marriage of Miss Paget to Lord Glenconner the cuttings relating to Miss Paget were placed in Lord Glenconner's envelope.

* * *

Mr. LEON GASTER (Scientific and Technical Circle of the Institute of Journalists, etc.): I entirely endorse the remarks of Mr. Hamer about the importance of the co-operation of the Press Government Departments and the Special Libraries.

In 1919 Sir Arthur Steel-Maitland, Bart., M.P., the Chairman of to-night's gathering, was Parliamentary Secretary of the Foreign Office and the Board of Trade, and in this capacity invited me, as Chairman of the Circle of Scientific, Technical and Trade Journalists, together with Mr. L. Pendred, Editor of "The Engineer" to discuss the best method of co-operation with the Press. Sir Arthur Steel-Maitland kindly accepted an invitation to address the Circle on Friday, April 4th, 1919, on the subject of "The Overseas Trade and the Technical Press."

At the meeting Sir Arthur Steel-Maitland urged the importance of closer co-operation, and after a most interesting discussion it was agreed that all bona-fide journalists should have every facility given to them by the Board of Trade and be afforded information regarding all future developments of the trade of the country.

If this facility which was then granted is now withdrawn, I think that the best plan would be to appeal to Sir Arthur Steel-Maitland, Bt., M.P., who is now a member of the Government, to bring about the desired co-operation. It is very essential that the Daily and in particular the Technical Press should give support to the Special Libraries movement.*

Major W. E. SIMNETT, M.B.E. (Assoc. Inst. C.E.): With regard to the relation between Government Departments and the Press: I am in the rather peculiar position of being able to speak with some degree of authority against myself as a journalist, because I had, as a civil servant for some years, to deal with this matter from the point of view of a Government Department. During the War several Ministers had made a practice of calling together journalists and having free and open conferences with them—not only those Ministers especially concerned with military and naval operations, but those at the head of civil departments as well. These conferences so far as they went were very successful. After the War several of the Departments continued the practice and set up Intelligence and Publicity Departments for this purpose. The Board of Trade has, of course, their own special Journal and I am sure would welcome co-operation in the dissemination of trade information. The President of the Board and his Officers have frequently given information to the Press, and would give more.

As regards Intelligence work, I think the Treasury's attitude is short-sighted and illiberal, but in relation to Publicity there is something to be said for the attitude of the Treasury official. For there are dangers in too close a relation between Government Departments and the Press. There was a tendency with several Departments to use that channel of information to the Press for catching the public ear and disseminating views which those Departments rather wished to forward with the public; that is a danger which has to be watched. I do not think that the attitude of the ordinary Government Department is to regard the Press as a poor relation; they are quite willing to co-operate with it if some means can be found of instituting regular channels.

There are many things in relation to the Press, to which, had time permitted, I should like to have referred. The question of the standardisation of the form and contents of technical journals; the publication of special abstracts or bibliographies of current literature, such as is done not only in the "Chemical Age," but also in several journals with which I am connected; and especially the question of scientific and technical information in the newspaper press. Some newspapers, to their credit, take special pains about this, but in general the standard is deplorably low, both in regard to accuracy and space allotted; there is need for more frequent summaries written by competent people in popular form, of scientific and technical advances, in place of the "dud" discoveries and unintelligible journalese which we now only too often get.

* Mr. Gaster, who had recently returned from a visit to Holland, where he examined the Special Library which is in existence at the Philips Electric Lamp Works at Eindhoven, gave a short abstract of the details which he obtained from Dr. N. A. Halbertsma, of the Technical Publicity Department of these works. (See page 158.)

*FIFTH SESSION - - - - Sunday morning,
September 27, 1925.*

Chairman :

Mr. L. STANLEY JAST.

THE SCOPE OF A POLITICAL LIBRARY.

By PERCY COHEN (Unionist Central Office).

I.

The Political Library very distinctly meets the definition which forms the basis of this Association. It is, if I may put it without undue self-satisfaction, a special collection managed by special persons for special uses.

My object in presenting this paper is to discuss the nature of such a library in the hope that it may not be considered inappropriate at a conference of special libraries and information bureaux.

I see that similar contributions are to be given by representatives of other political organisations, and I hope that it will be possible to discuss the Political Library in a non-party way.

Perhaps some of my fellow delegates who are schooled in the niceties of scientific phraseology may cavil at my description of the Political Library as a special collection. Politics is a generic term which could as easily signify the spirit of Parliamentary institutions as the precise duties of a rural district council or phases of thought as far removed as the growth of the electorate and low temperature carbonisation of coal. A library which at any selected moment is equal to demands for information coming under such widely separated topics is a special library.

Its volumes, its periodicals, its files and its indexes must constantly expand under the pressure of the fluctuating interests of public opinion. Public opinion is anything but specialist—I must resist the temptation of enlarging on such an alluring theme—but the library which keeps pace with public opinion and takes steps to keep itself and its numerous disciples informed of the facts essential to the proper study of current problems of a political, economic, commercial or social character, necessarily meets the exacting test of the special library.

II.

The library is a recognised part of the political machine, and in manifold ways has to play its part in the organised process of educating public opinion politically, which is termed propaganda. Political propaganda is essentially an activity which depends on the dissemination of accurate information, secured in a minimum of time to produce a maximum effect. Its arts are many and

varied. They embrace the production of books and pamphlets, the speech on the platform, the letter in the newspaper, the house to house canvassing, the poster on the hoarding, the pithy little leaflet, the open air oratory in the park, no less than the leading article in the newspaper.

I do not say that all such diversions of modern affairs could not exist without a library service. But obviously the library must occupy an important part in helping these various forms of political education to be served by accurate and systematized intelligence. In the old days of a restricted electorate, public opinion was infinitely less volatile than it is to-day. Everyone was born a little Conservative or a little Liberal and a secession was in the nature of a local sensation. But to-day there is an electorate of 21 millions, of whom nine millions are women, and there is undoubtedly an element of change and instability present in a wide electorate which is peculiarly susceptible to the influence of propaganda. I mean there must be a certain proportion of the electorate which has no certain views and which can be swayed by an effective propaganda even, if it can never hope to reach those whose "invincible ignorance" mocks the efforts.

All of which goes to show that the call for the library in political life to-day is vastly more insistent than ever it was, and it must be increasingly vocal as political education increases and political inquisitiveness is whetted. In the modern political organisation the library has become a veritable nerve centre. Its resources must not fail the writer or investigator. Its helpers must be trained to answer the questions of inquirers. Its organisation must be keyed to a pitch of alertness and efficiency. It must be a *vade mecum* to the beginner in politics and an intelligent aid to the expert and research student.

III.

The first principle of the Political Library is the historical sense. Bolingbroke described history as philosophy teaching by examples. The student of the British Constitution who does not think it worth while to study the history of the country can at the best only have a blurred appreciation of his subject. Social and industrial economics cannot be studied correctly without a reading of industrial and economic history. The Political Library must not neglect the acquisition of historical works in the main classes of subjects.

The second is to be up-to-date in securing additions to its shelves. It is useless to approach any given political problem without having the latest and best books. Nothing offends the aesthetic taste of the librarian so much as to notice in any library a neglect to secure the latest edition of a standard work. In the Political Library there is a world of difference in having at one's hand the twelfth or thirteenth edition of "Erskine May."

Its third I would describe as balance and perspective. Monypenny and Buckle's "Disraeli" (to give an instance which occurs to me) would probably more than satisfy any average reader who wished

to study the great statesman's life, but even that great biography in six volumes, expansive and substantial as it is, must be considered in relation to other works on Disraeli, which form a small library in themselves. A Disraeli collection would comprise all the best available biographies, his novels, his treatises, like his "Vindication of the British Constitution," his collections of speeches, the commentaries of interpreters, and the literature comprised in contemporary pamphlets.

Its fourth, and not the least important, is catholicity. The Political Library which contained only the volumes of one political thought or colour would serve little or no purpose. All schools of thought and all shades of thought should be represented. A school of thought is a sort of intellectual umbrella which shelters many companions linked together by an outlook of mind, but sharply differing in detail. Since Karl Marx wrote his "*Das Kapital*" there have been numerous expositions of Marxian economics and it is well known that even his sympathetic commentators are not agreed about Marx or amongst themselves. The student of Bolshevism who has just read the Trade Union Report on Russia would have to bear in mind the works of Spargo, Kautsky, Russell and Sarolea.

The fifth is mechanical, but essential—the provision of a catalogue, both author entries and subject index, compiled on the approved lines. The Political Library should possess the same facilities and resources as other libraries to provide bibliographies on any given subject, comprising books, pamphlets, Parliamentary publications and magazine and newspaper articles. With such an instrument at his elbow, the political librarian can speedily produce bibliographies on subjects as varied as, say, the Co-operative Movement, Foreign Exchanges, Fourth Party, Taxation, Family Endowment, Economic Geography, W. E. Gladstone, Political Philosophy, and even Women.

IV.

I have discussed the functions and principles of the Political Library. Let me come a little closer and indicate its contents. Printed books must be the principal possession of the Political Library—the systematic works in political economy and political science and philosophy, biographical collections arranged in periods or grouped round the great figures of the past, treatises on industrial economics and commerce, text-books on the Constitution in this and other countries, Parliamentary and general history, Machinery of Government, history of the Franchise and Election Law, Foreign Countries, Socialism and Social Science, and so I might go on. I have said nothing about collections of Parliamentary Debates (an obvious adjunct), and rich is the Political Library which has the complete series running from Cobbett and Hansard down to the current Official Report, numbering hundreds of volumes of rhetoric, immortalised if not immortal.

If it has in addition the Statutes from the beginning, a set of the best reference works and annuals, the latest edition of the

"Encyclopaedia Britannica," and such luxuries as the periodical publications of the League of Nations and the International Labour Office, the political student's gratitude should be complete.

Pamphlets are indispensable. A pamphlet is a revealing document. It is the *hors d'œuvre* of political literature, and many are attracted to this light dish who are repelled by the heavier course of the treatise or text-book. Pamphleteering was once the principal form of polemics. Swift, Burke, Johnson and Gladstone, to mention a few, all indulged the weakness, but to-day it is a decaying art from the point of view of stateliness and invective. Nevertheless pamphlets to-day, if they lack the massive touch only supplied by a Burke, remain prolific and must be linked up with the more pretentious productions between stiff boards. In a catalogue, the pamphlet assumes the same importance as a book, and as I said earlier the bibliography includes pamphlets.

Collections of speeches, both in book form and in press cuttings, books or files, form, it need hardly be said, one of the chief mainstays of the Political Library. Lord Rosebery in his "Randolph Churchill" wrote: "No one reads old speeches any more than old sermons. The industrious historian is compelled to explore them for the purposes of political history, but it is a dreary and reluctant pilgrimage. The more brilliant and telling they were at the time, the more dolorous the quest. The lights are extinguished: the flowers are faded: the voice seems cracked across the empty space of years, it sounds like a message from a remote telephone: one wonders if that can really be the scene that fascinated and inspired. Was this the passage we thought so thrilling: this the epigram that seemed to tingle: this the peroration that provoked such a storm of cheers? It all seems as flat as decanted champagne." Despite this view political propaganda has never neglected speech quotation. "What did Gladstone say in '84?" has passed into the currency of a music hall jest and the art of effective quotation has not been lost in the present political generation. To confront the statesman with an inconvenient quotation from a long forgotten utterance is one of the most diverting pastimes of the Member of Parliament, who generally knows where to go for his powder and shot.

A collection of cuttings from newspapers and periodicals is an essential complement of the Political Library. I need not in this assembly deal with the value of newspaper cuttings nor with the importance of indexing and classification. There are some in politics who set more store on the newspapers than on books or pamphlets, while there is an eternal feud between those who write for the Press and those who produce books as to their respective positions in the estimation of public opinion. A cynic was once asked the difference between literature and journalism, and his reply was: "Journalism is unreadable and literature is unread." After all he was only a cynic.

Just as essential to the Political Library is a collection of Parliamentary and official publications which lose their value unless they are kept up-to-date. It was said of a prominent states-

man that his principal diet was the Blue Book, which accounted for his lack of soul. But it appears (to judge from a recent Stationery Office pamphlet) that official publications contain hitherto unsuspected sources of colour, humour and imagination. The head of one Government Department—I will not specify him—has never been afraid to interpolate into his annual reports reflections which deserve the description of ironical humour. Statistical data have to be constantly compiled, and the literature of the official Departmental world, the heavy and light statistical artillery, must be treated, from the point of view of classification and arrangement, with as much solicitude as all other publications bearing directly or indirectly on political affairs.

V.

I think I have made it clear that the Political Library is a specialist library, catering for all who have any interest in public affairs. It is only incidental that such a library is the department of the political organisation. The principles and purposes I have endeavoured to indicate must be inseparable from any library which has any pretension to being called political.

Its helpers must be specialists in the sense that political research and the provision of political information call for qualities and mental resources which are not usually associated with the staff of the average library.

Classification and the necessary routine of library management are merely a means to an end. Knowledge, memory, resource and adaptability are requirements which must take prior places.

Any orientation of public opinion, any call for fresh knowledge on a specific subject, must not find the Political Library behind.

The Political Library from its very nature links itself up with all other specialist agencies whose function is to serve a particular sphere and at the same time to make a contribution to the spread of knowledge in the community.

A CLEARING HOUSE FOR POLITICAL INFORMATION.

By C. R. SANDERSON (Librarian, National Liberal Club).

I think I may most usefully contribute to the discussion by talking round rather than talking at my subject, and I want to begin, therefore, by making one or two rather commonplace statements.

A librarian's job, in any type of library, is three-fold. First, he collects the material which will satisfy the needs of the community his library serves; secondly, he arranges that material and makes it accessible; and thirdly, he exploits it in the interests of his clientele. Of these three functions the last is the most recent, but it is the most important, because without exploitation any library, general or special, is to-day doomed if it is not already dead. It is exactly in this question of exploitation that a political library, as a type of special library, gives us one of the best illustrations we can have, but if I might turn to the public library for one moment it is because I would suggest that in the public library system we can find an example of every other type of library.

I turn to the public library primarily because one of the important pieces of work which the progressive public library of to-day is doing is that of endeavouring to create a community in the coming generation which will make easier the profitable use of special libraries, and this because the library is, through the third function of the librarian, deliberately attempting to make the use of books play a full part in education.

If we look at the organisation of its work with children, the library carries out all three functions, but it emphasises the last—the exploitation. It collects the material, presents it to the child, creates an atmosphere that is attractive, links up the child with the working of the library as a kind of machine, joins up books, literature, art and present day affairs by means of pictures which the child cuts out and mounts, and for the younger children it tells stories from books—tells stories, not reads stories. The work of the public library with the child can well be summed up in a statement made by Mr. Mathias at a former Library Association Conference. He suggested that it had as its aim the creation for the child of such a mental background as would enable the child to throw into proper projection the varied experiences of life as they came along.

Similarly, on its lending library or "home-reading" side, the progressive public library collects the material, makes it accessible, and in the exploitation of it the librarian has adopted all the arts of salesmanship to get his goods into the hands of his customers.

So too, there is the same principle of exploitation in the progressive public reference library. Not only is there the communal study which caters for the continuous reader—for accommodation is equally important with the material made available—but there is provision for the man who comes in with a specific enquiry. He

wants information on a definite point (probably at the beginning he is indefinite and has to be made definite before his enquiry can be answered) but he does want help on a definite point. It must be recognised, however, that the needs of what we may call the continuous researcher—the serious reader—and of the intermittent researcher—the man with the particular enquiry—are not separable. Sooner or later, the continuous reader must come forward through the reference book to the book of reference (if one may make a distinction without a difference), through the year book, through the material which is often of only transient, but temporarily important, value, until he makes contact with the material which concerns not only last year, but yesterday. Similarly the specific enquiry of the intermittent researcher involves the use not only of current or “fugitive” material, but also of books in the main, permanent stock.

These two services of the reference library, therefore, are not separable, and in the collection of his material the librarian continually bears this fact in mind. For his basic stock he follows the ordinary methods of book-selection, using every piece of bibliographical knowledge he possesses or can acquire, in order to bring together those books, each one of which will add to the aggregate information the library can provide; on the other side—and this is a more difficult part of his task—where he has to bring his library absolutely up-to-date, because up-to-dateness is a test of its efficiency—he has to collect all that mass of fugitive material in the form of pamphlets, documents and reports, articles from periodicals, newspaper cuttings, and anything he can get.

I have been talking on general lines, but there is really no discernible difference between this basic work of the reference library and the basic work of a special library so far as method is concerned. Moreover, it is in the exploitation of its material in the interests of the specific enquirer that the reference library makes one of its most “useful” contributions. This is one of the most recent developments of the library. It is not content to refer the enquirer to a book or books which contain the information he wants; the library definitely attempts to extract or abstract the information from those books and to present that information to the enquirer in such a form that, so far as the individual is concerned, the information can immediately be turned into knowledge.

We now have our definite point of contact with the special library, for this last development is really the prime function of the clearing house for political information. Such an organisation is based on the political library, and on the exploitation of the resources of that library to the fullest extent, resources which have been collected on exactly the lines just referred to, and which include not only the basic stock of books, but a full supply of “fugitive” material. And the exploitation of these resources involves not merely the handing over in bulk of the material on a given topic, but the extraction or abstraction of the momentarily vital part of that material in such a form that it can be immediately used.

Further, not only does the political library use its own resources in this way, it also uses the resources of everyone who is willing or can be made willing to help it. If it gets an enquiry with which it cannot deal at the moment (and it does not pretend to be omniscient) very often that enquiry can be postponed for an hour or two, sometimes for a day or two, and in the meantime the political library makes a definite attempt to beg, to borrow, or even perhaps to steal the particular material involved. It uses organisations working in conjunction with it, whose activities are narrowed down to a specific and limited area of the field; it uses propaganda associations either according to its needs or, by the help of two opposed propagandists, collects the material most cleverly put from both sides of a question. It also uses commercial undertakings as well as non-commercial organisations; for example, it will make considerable use of the "Times" Index Department, not merely through the published indexes, but also through the facility granted to subscribers of using unpublished index entries which are right up-to-date. Indeed most of the newspapers are willing, within limits, of course, to place the material in their private indexes at the disposal of any recognised institution.

But now I wish to ask your consideration of the question from a somewhat wider point of view. The statesman has his own clearing house; he has his own staff who are willing to perspire for him on his merest nod. The politician has his clearing house in the organisations which Mr. Cohen, Miss Mitchell and I represent here. But what about the man in the street who is outside these particular organisations? Where is he catered for? It is not sufficiently recognised that political information is not necessarily party information at all, and when we get to the vast majority of the community in those places away from the larger libraries, there is no provision at this moment for the distribution of what we can rightly call political information—because the term "politics" ought to be, if it is not, synonymous with public welfare. That in this country of ours to-day the community as a whole should be compelled to rely largely on the *suggestio falsi* of the leader columns and the *suppressio veri* of the news columns of newspapers, or on other kinds of work which particular interested and biased organisations do, seems almost an intolerable state of affairs. I do not refer, of course, to the organisations which Mr. Cohen, Miss Mitchell and I represent, because I am sure my colleagues will bear me out when I say that truth is always on our side, or at any rate if it is not on our side it is certainly within the triangle which we represent. But the information we have ought to be placed at the disposal of the community and not merely of one part of it.

It can be done. How? There are many ways. I come back to the plea I recently raised elsewhere for the necessity for some organisation of what we may call a reference library service for the smaller areas, because the development of a national (and this does not involve a nationalised) reference service means the development of a national information bureau service. For this we look with a good deal of hope to the recommendations of the

Departmental Committee on Libraries, which may help us to solve some of our problems. Or it may be possible that legislation will be necessary before we get very far on our way. Curiously enough, in Ireland at this moment on a very controversial point there is an acceptance of one principle by both Northern and Southern Ireland ; this is that so far as library work is concerned, the smaller units of local government are unfitted to function independently, and consequently, quite recently, these smaller units have been deprived of their library powers which have been centralised in the county authorities. Or again, there is the "docket library" system which is being tried out in America. There a centralised organisation, in this case a State Library, is prepared to lend a book or books to any library or to any individual who cannot otherwise get such books, exactly as our Central Library for Students is doing here. But this American library aims not only to do that, it also collects dockets of the "fugitive" material to which I have referred and so brings any topic up-to-date. And it lends the docket together with the books on correlative subjects. It is an idea worth considering.

I do want, however, to make it very evident that from whatever point we investigate this problem, we come back to the need for some centralisation, and eventually to the need for some central reservoir from which we can all draw and probably towards which we can all contribute. We have similarity of methods between special libraries themselves, and between the special libraries and general libraries, especially on the "reference" side. But not one library can do its work in the most efficient and effective manner and stand alone. We can watch one another's methods and copy those we think best, but our greatest benefit from contact will be a fuller utilisation of our common resources and a deliberate increase of those common resources. And so, as I have said, we come back to the necessity for some common reservoir from which we can all draw according to our needs and towards which we can all contribute according to our possibilities.

It will almost certainly be large enough to be departmentalised and we should be using and helping not merely a general library but departments specialised in our own line of work. Such a central pool would be unable to go into the intricate detail necessary in a highly specialised library or information bureau, but in its particular departments it would provide the first stage of specialisation and would thus economise the work of more special libraries in the preliminary stages of their continuously arising specialised investigations, whether these come within the politico-economic sphere, the industrial or technical sphere, or any other section of our activities.

THE SCOPE OF A TRADES UNION AND LABOUR LIBRARY.

By Miss C. MITCHELL (Trades Union Congress and Labour Party
Joint Research and Information Department).

The maintenance of a common library of official documents and books is part of the duty of the Joint Research and Information Department of the Trades Union Congress and the Labour Party. The Library is common to both the Trades Union Congress and the Labour Party, and the Joint Departments (Research, International and Publicity) controlled by the two organisations. It is, therefore, both political and industrial, and seeks to collect material over the whole range of political, social and economic questions. As a working instrument it includes not only printed documents, but the files of the Research Department.

The Library is not a collection of well-bound volumes ; it is rather the raw material for research and propaganda. Its character is determined by the purpose for which it exists. Its object is to furnish the material required by both the industrial and political sides of the Labour movement. It is, therefore, a specialised library, though the information which the Research and Information Department and the International Department are asked to supply to Trade Union and Labour Committees, Trades Unions, Local Labour Parties, Members of Parliament and of local authorities, and other individual members of Trades Union and Labour organisations is of the most diverse kind. The Library is very different from a public library or the ordinary private library. It partakes rather of the character of a newspaper library on the one hand and of the library of the research worker on the other.

The Library consists of :

- (1) Official publications.
- (2) Books and pamphlets.
- (3) Periodicals.
- (4) Newspaper cuttings.
- (5) Special records.
- (6) Memoranda.

Something may perhaps be said under each of these heads.

(1) OFFICIAL PUBLICATIONS.

It is, of course, necessary for the library to secure copies of the British Official publications—reports and evidence published by Government Committees ; the Annual Reports and Returns of various Departments ; the various Government periodicals, such as the "Labour Gazette," the "Board of Trade Journal," the "Journal of the Ministry of Agriculture," etc. ; the special and occasional reports published, for example, by the Ministry of Health, the Board of Education, and the Medical Research Council. British Government publications form an important and, indeed, essential part of the Library. Parliamentary Debates,

Acts, and Bills of both the House of Lords and House of Commons are taken and a special index is kept.

The Library also contains almost a complete set of publications issued by the League of Nations and the International Labour Office. The reports of certain Dominion and Foreign Governments, of local education authorities, school medical officers of health, etc., are also filed. In these respects, however, the Library makes no pretence of being comprehensive, much less complete.

(2) BOOKS AND PAMPHLETS.

Books, in the sense of bound publications, form but a relatively small part of the Library, largely because of limited financial resources, but partly also because books, generally speaking, are of less value having regard to the purposes of the Library, than the other material which the Library collects. Perhaps the most important volumes are the various Year Books to which reference is made under the heading of "Periodicals."

Pamphlets and booklets, expounding or criticising Labour policy and the Trade Union movement, and outlining the policy of other interests, are naturally to be found in the Library, as well as those dealing with current political and economic problems. The Library endeavours to put upon its shelves important studies of political, social and economic questions.

(3) PERIODICALS.

One of the most important sections of the Library is the collection of Trade Union journals.

The Library takes the more important general Year Books, and certain specialised annual publications, such as the Stock Exchange Year Book, the Wool Textile Year Book, Railway Year Book, China Year Book, etc.

It subscribes to a number of British and Foreign journals, such as the "Economic Journal," the "Journal of the Royal Statistical Society"; the "Economist"; "L'Europe Nouvelle," etc., and also to a number of commercial and trade papers concerned with the staple industries of the country, such as "Iron and Coal Trades Review," "Wool Record," "Shipbuilding and Shipping Record," etc.

A good many daily papers, London and Provincial, and some Foreign papers are taken, marked and cut. In addition the more important are filed ("Times," "Manchester Guardian," "Daily Herald").

(4) CUTTINGS.

The daily papers are marked by members of the staff and the cuttings filed under subjects. In addition, cuttings are received from press-cutting agencies. A good many of the cuttings are, of course, of fleeting interest, and from time to time those which are no longer of value are weeded out. The cuttings cover a wide range

of subjects, both British and Foreign, and include the most important reports of Company meetings. The press reports of speeches by prominent politicians and industrialists are invariably cut and filed. Articles, interviews and "news," contributing, whether by suggestion or criticism or the statement of facts, to the consideration of political, social and economic problems are cut and filed.

(5) SPECIAL RECORDS.

The Library contains a large collection of Trade Union rules and constitutions, and industrial agreements, and the Reports of Trade Union and Labour Conferences, national and international.

There are also recorded regularly the more important votes cast by all members of the House of Commons. The compilation of voting records is part of the routine work of the Research Department.

Wage changes in the various industries are recorded month by month, and the Department now publishes a general wages index number.

(6) MEMORANDA.

The memoranda prepared by the Advisory Committees attached to the Joint Research Department are all filed, together with the various memoranda prepared by the Research Department Staff. Many of these documents are, of course, confidential.

On the industrial side, the Library collects and indexes from periodicals all the available information with regard to wages, hours of labour, working conditions, unemployment, trade disputes, industrial diseases and the like in British industry, and, as far as possible, in industries abroad.

Further, there is material dealing with the state of trade, and the commercial and financial aspects of industry.

On the political side, the material required is to a large extent that which must be available for the industrial movement, for economic questions are the concern of both the Trade Union Movement and the Political Labour movement.

International questions are dealt with by the Joint International Department which requires for its use both official and non-official sources of information on international affairs.

Material on social questions—insurance, public health, housing, education, etc.—looms large and is required both for Parliamentary and local government purposes. Increasing attention is being given to the collection of material relating to local government.

The Library endeavours to collect documents from every source and not merely from Labour sources. Some of the material is obtained by the method of exchange. It must, of course, provide itself with Trade Union documents, but it welcomes, whenever it can obtain it, material from employers' organisations. It collects

Labour material, but is equally concerned to collect the publications of the other political parties. Indeed, apart from British and Foreign official publications, perhaps its most necessary material is that provided from non-Labour sources, such as the trade papers and the publications of political opponents. At the same time, its function is, without regard to the nature of the source, to collect as far as possible all the relevant material upon problems in which the Labour movement is interested.

The Library compiles the Indexes to such publications as the Annual Report of the Labour Party, the Labour Year Book, Labour Magazine, and the Monthly Bulletin of Industrial and Political Information.

Broadly, the Library, within the limits of the available resources, endeavours to provide the documents necessary for the study of political, social and economic problems, and for a comprehension of the policies of other interests—political and economic—on these problems.

* * *

Mrs. DUGDALE (League of Nations Union) : I was much interested to hear Mr. Sanderson say that he thought the functions of a library and of an information bureau were the same. I am not quite sure that I agree with him. I do not feel certain that the qualifications necessary in the perfect librarian and in the perfect information officer can always be combined in one person. To begin with, the training is usually quite different. The librarian has to learn a great deal about technique, such as filing, cataloguing, bibliography, and many other technical details which are not really necessarily part of the equipment of the perfect intelligence officer. To describe precisely what is the equipment of the perfect intelligence officer is a more difficult matter.

It is worth remembering what a large amount of important information work is done by propaganda associations—the political parties and other associations which have been formed for pressing some particular angle of the truth upon the public. It is very difficult for a person who is running the information department of such an organisation to keep his mind free from bias, and yet it seems to me all-important that he should do so. The intelligence department is usually called upon to express opinions on current affairs, but I think the people engaged in that work ought to remember that their opinions should be kept quite separate from their supply of facts ; if a memorandum has to be produced in answer to an enquiry upon a matter of current interest it should always be done in two parts : all the facts should be given in so far as it is possible to supply them ; but their interpretation should be given in a separate section. In organisations such as the political parties, or the association which I myself represent, which, although not a party organisation, nevertheless has a very definite bias towards impressing the public with the value and merits of the League of Nations, it is more wholesome that the intelligence department should pass its facts on to another department for purposes of presentation.

Major W. E. SIMNETT, M.B.E. (Assoc. Inst. C.E.) : After what we have heard I suppose we ought to abandon the belief that the whole duty of a political organisation, or at any rate of its library, is *suggestio falsi, suppressio veri*. The best political library in the country is the library of the House of Commons. Bearing in mind Mr. Sanderson's suggestion, I think we have here a step towards a national library of political science, because in addition to its own resources it can call upon all the departmental libraries of the Government.

Mr. J. W. NEWBOLD, M.A. (Labour Research Department) : The Labour Research Department is in rather a different position from the Joint Department run by the Labour Party and the General Council of the Trades Union Congress. It was started in a very different way about 1912 or 1913 by Mr. Cole, Mr. Page Arnot and a number more who were associated with the

University Socialist Federation—a Federation of the Fabian Societies in the various universities. At the commencement it was known as the Fabian Research Department, and, with the Webbs at the head, it combined the finest research tradition in the Labour Party with the finest research brains that the universities have ever turned out. The Department has functioned all along as a scientific political organisation where the specialists have rigidly kept control. The various political bureaux and libraries which have been described this morning are all of them limited by the fact that they are employed by political parties to present specific cases. The Labour Research Department on the other hand has all along had an Executive consisting primarily of specialists drawing upon the resources of the Labour Movement; as time has gone on there have been added to the executive persons who have had to make use of the information.

We have had three periods during which different ideas have dominated our Executive. We began with the Fabian period; we then swung over to the position of the National Guilds League; now we are pretty equally divided on the question of communism.

I anticipate myself that we shall develop eventually into the research department of a new university that is very rapidly growing up in this country—the University Movement of the National Council of Labour Colleges, which now has more than 30,000 students a year. We have not yet in that movement built up a Special Libraries Department; immediately after the Hoddesdon Conference I sent in a report of the activities of this body and suggested that if we participated fully there would be no need to set up a special department, since we could get the work done here, so to speak, through a central clearing house. The difficulty is that when you are working for a party or for a trade union you receive a request just before a Royal Commission is due to meet, "Get to work at once and prepare information." If you had three months in which to prepare the information it might be more possible to do it. The Labour Research Department is endeavouring to be ready in advance.

An important point about a political research department is that the people who are in charge of it shall not only have had specialised experience in a library or research bureau, but that they shall have had experience of using the information which the bureau produces. A good example of this is seen in the Independent Labour Party Information Department which has an experienced political propagandist at its head.

There are two distinct sides to this question: you have your specialists in business, and in the academic world, compiling the information; you have the man who knows how to present it in propagandist form. For instance, when engaged on a piece of research work, I should adopt entirely different methods to those which I shall adopt to-morrow when using information supplied by the Labour Research Department regarding a seaman's strike, at a street corner in Southampton.

Mr. F. PACY (Library Association): Mrs. Dugdale has been consistent and persistent on the distinction between a library service and a bureau of information. If she fails to get information from any representative library, she may be perfectly assured that it is a bad library, badly selected, with a bad librarian and an inefficient staff; I maintain that it is the duty of every well-equipped library to provide information and provide it quickly.

Mr. B. M. HEADICAR (London School of Economics & Political Science): The difference between the library which I control and the three libraries described this morning is that whereas they will agree that they have to provide information largely from a party point of view, my library does nothing of the kind; it presents impartially the information wanted and leaves decisions to the enquirer. I was rather surprised that no collections of election posters have been mentioned. Our collection in Clare Market dates back to 1832, and forms a most interesting survey of political psychology.

I was interested to hear what Mr. Sanderson said about a national political library service, a proposal in which I hope the London School of Economics may be able to take a leading part. As you heard from Mr. Gorrie yesterday, the Carnegie Trustees very kindly offered a substantial grant towards the publication of a subject catalogue of our library; this will constitute a bibliography of economics containing some 350,000 items; a condition of the grant was that our library shall be available both for purposes of loan and for reference.

Referring to what Mrs. Dugdale has said, I can only say that I strongly oppose the idea that a person in charge of an information bureau need not possess a knowledge of library technique.

Mr. H. ROTTENBURG, M.A. (Engineering Laboratory, Cambridge University) : I have often noticed that people using libraries make notes on scraps of paper. I would like to suggest that some sort of sheet should be drawn up on which we could enter the subject of our research. The results of our enquiries could be tabulated and if the sheets were then handed in to the library there might probably, by this simple method, be built up a useful book of reference.

If I were to go to the three readers of the papers this morning and ask each for a list of the best books on the private ownership of property, I might well be given lists possessing few features in common. It being a matter of opinion, I think such lists of books should be signed.

Regarding facts issued by information bureaux, it is clear that a fact cannot be sterilised ; there will always be a germ of " propaganda " somewhere. The only way to make progress is for all of us to be absolutely honest.

Mr. J. W. HEADLAM-MORLEY (British Institute of International Affairs) : I could not help feeling that there was a very remarkable difference between the institutions described by Mr. Newbold and Miss Mitchell and those described by Mr. Cohen and Mr. Sanderson. May I venture to suggest to Mr. Cohen and Mr. Sanderson that what they were describing were not really, in the strict sense, special libraries at all. If we consider what political interests mean in the life of the country, it is evident that no library can possibly cover all the subjects involved. When a matter becomes political, it passes out of the sphere of the specialist. The libraries described both by Mr. Newbold and by Miss Mitchell seemed to me really specialised, inasmuch as they deal largely with such highly technical information as the history of trade unionism, the condition of the working classes, and the relations of employers and labourers. They specialise, and rightly specialise, on these subjects, and are thus able to attain a high intellectual standard in the contributions which they make to political thought.

The more general libraries described to us by Mr. Cohen and Mr. Sanderson seem to me to fall into a different category. Taking such current matters as the coal question or Mr. Lloyd George's Report on Agriculture, the published reports become part of the political material used by the ordinary man in the street : but we all know that behind such reports there lies an enormous amount of work of a specialised nature. I want to suggest that if the political education of the country is to be carried on we require behind the general political libraries a large number of really highly specialised libraries for use by the people who are working up the material for the politicians. The institution which I represent here is at this moment trying to build up a library of that kind.

Nothing has been said about foreign affairs, which are of extreme importance politically ; they cover an enormous field of knowledge ; and I am quite certain that no general political library can possibly possess all the necessary information. At the British Institute of International Affairs, therefore, we are making an attempt to provide the purely technical material which those may use who are trying to educate their party in foreign affairs. We should not give space on our shelves to a good deal of the material, such as newspaper articles, which would be found in a general political library. Briefly I want to suggest that there ought to be side by side with the big political libraries a considerable number of very highly specialised libraries, of the kind found in every Government Department, for use by members of Parliament, press representatives and pamphleteers. We should be very glad of any help or suggestions as to the way in which a library of that kind could be made most useful.

M. P. OTLET (Institut International de Bibliographie, Bruxelles) : The question under discussion this morning is one of the utmost importance from the point of view of international affairs. The great practical need at the moment is that we should all be less passionate, less partial, and less ignorant. Many international associations at the present time are aiming at dossiers on specific questions controlled internationally and constituting part of the great general reservoir of information.

Mr. F. B. LAWLEY: The Independent Labour Party Information Committee tries to do to some extent the particular kind of work that was previously done by the Fabian Society, and which is done by Mr. Newbold's department to-day. What I should like to see is more definitely educational propaganda work. All our subscribers are entitled to get weekly and monthly notes, designed to assist them in their public propaganda; information about any matter which broadly affects politics or sociological study is freely given where it does not involve an intensive study.

Like the Labour Research Department we specialise upon the preparation of syllabi for study circles, and we issue pamphlets for the guidance of students. I hope that any that are interested in our organisation will write to 14 Great George Street, as we want to co-operate with all those working along similar lines. I hope you will recognise that the Socialist Research Departments are endeavouring within the limits of their ability to contribute something of practical and of real educational value to the life of this country.

Miss P. STRACHEY (London Society for Women's Service): The National Union of Societies for Equal Citizenship has in its premises two libraries: a historical library, the Cavendish Bentinck Library, which contains books which are not lent out, but which can be consulted on the spot; and the Edward Wright Library, which is a lending library which anybody can use in return for a small payment. The London Society for Women's Service has also a library, but it is more in the nature of an information bureau, specialising in current information.

Dr. R. S. HUTTON (British Non-Ferrous Metals Research Association): I want to appeal to the three readers of papers this morning and to certain Government Departments that are associated with the industrial side of our work, to develop further their provision of information on foreign industrial practice and questions of social welfare abroad.

As I am out of the chair, perhaps I can express rather more sympathy with Mrs. Dugdale than I did last night. I feel that the question of the information bureau is an intensely important and interesting one. To my mind, the first and foremost necessity is the provision of an expert professional librarian; next we must have access to specialists; finally one wants a man who may act as an interpreter, or exponent of the subject. To collect information requires experience; to see that it is correct by consulting an expert staff is no easy matter; but to bring that information home to the people to whom we want to supply it is often the most difficult of all. It is not only a matter of answering questions; once you can get questions asked you have won half the battle. The problem is often how to get information to people who do not yet realise that they want it.

Mr. P. COHEN (in reply): I listened with great sympathy to Mr. Sander-son's aspirations about a central reservoir, though I am sure he would be the first to admit difficulties in the way.

Mr. C. R. SANDERSON (in reply): If I may reply very briefly to the points which have been raised in connection with my own contribution to the discussion, I would suggest to Mrs. Dugdale that the information bureau exists wholly and solely for the exploitation of certain classes of material, and I fail, therefore, to see how any person who runs an information bureau can exploit that material if they do not collect it and make it accessible. From Major Simmet's remarks we might expect that everyone could go freely to the House of Commons Library. This, of course, is not so, and so far as the majority of the community are concerned it is a closed institution. Except for the fact that statutorily certain pieces of information (for example, certain bills and other documents) must be laid on the table of the House and be made available by being placed there, the material inside that particular library is not accessible to us in our capacity as private individuals. Mr. Rottenburg would doubtless be interested in the revival of a little publication which existed some years ago called "Where to look." It indexed almost all our annuals and year-books and indicated exactly in which one could be found specific pieces of information.

The institutions described this morning are working from three slightly different standpoints, but the material which we collect is common to all three. We are all aiming to produce the same type of information for a more or less wide consumption. Mr. Cohen or I, sitting at our desks, could probably produce a somewhat detailed biographical account of the famous

Mr. Cook in a few seconds ; and no doubt Miss Mitchell could similarly produce information in a few seconds showing how Mr. Churchill has climbed up the fence from one side, got down on the other side, and has now climbed back to his original side ; and she could probably make suggestions as to how long he is likely to remain there. But this kind of thing is the least vital side of our work, and I wanted to throw out this suggestion that since political information is not necessarily party information, but is material that concerns public welfare, some method should be found of distributing it in a non-partisan way, though the specialised political libraries could undoubtedly help in the work.

A NOTE ON THE INFORMATION INDEX AND LIBRARY SYSTEM OF THE RESEARCH LABORATORIES OF THE GENERAL ELECTRIC COMPANY LIMITED.

Communicated by L. D. GOLDSMITH, B.Sc., F.I.C.

(Research Laboratories of the G.E.C. Ltd.).

The Research Laboratories of the G.E.C. have developed an information index system based on the abstracting of matter from periodicals and books (principally the former) by the Research workers themselves.

An essential feature is the method by which journals and periodicals are circulated to members of the staff. It is not possible to describe this in detail here, but the cardinal points aimed at are these :

- (1) Any member of the scientific or technical staff may have for reading any periodicals which are taken by the Laboratories.
- (2) A fixed period is allowed for reading, which is never extended until the journal has finished its full circulation.
- (3) The order in which a journal is circulated to its particular readers is determined (in the last resort arbitrarily) on the basis of their relative interest in the subjects with which it deals.

Short abstracts of articles of permanent value are made on special slips by members of the Scientific staff, each of whom deals with subjects allotted to him according to the nature of his work and interests. An arrangement also exists by which a reader may refer, for this purpose, an article whose value he is not competent to assess, to another member of the staff who deals with that particular subject, but does not normally read the periodical in which it appears.

Before an abstract slip is sent to the librarian, it is given a subject heading for indexing purposes, and this is the only point at which the system requires special care.

The system of headings used has been evolved to suit the special circumstances of an index covering a very wide field of pure and applied science, for use mainly, if not entirely, by the people who compile it ; consequently the headings are more on the lines of an encyclopaedia than an ordinary library index.

Simplification has been carried out by standardising as far as possible the " sixth-cuts " or sub-headings. The following are a few examples of the standard sixth-cut headings in use :

Physical Properties.	Thermal Properties.
Chemical Properties.	Mechanical Properties.
Data.	Manufacture.
Preparation.	Bibliography.
Analysis.	Theory.

These sub-headings are used under main headings, which may be in general either concrete things (e.g., the chemical elements,

Furnaces, Pyrometers, Dielectrics, Glass, etc.), or processes (e.g., Distillation, Filtration, Harmonic Analysis, Photography, Viscosity—Meast. of, Resistance—Meast. of); the first kind are far the more numerous. Endeavours are made, so far as possible, to keep down the number of new sub-headings, and new main headings are chosen with this end in view.

When the material classified under a main heading becomes too bulky, the cards are re-classified; for instance, the heading "Furnaces" above has been expanded into six new main headings such as Furnaces Experimental, Furnaces Industrial Electric, Furnaces Industrial Fuel, etc., etc. "Glass" has been expanded into sixteen new headings. The sub-headings under "process" main headings tend to be rather more specialised and less easy to standardise than those under "things" but as already stated the number of "process" main-headings is a small proportion of the total.

To ensure that indexers shall use the most suitable headings, and to prevent the manufacture of unnecessary ones, the following steps are taken:

- (A) A key-index of all main and sub-headings is kept available for general use in the library; in this all current sub-headings are entered on cards titled with main headings.
- (B) All slips before typing are referred to a committee of four members of the scientific staff who approve the headings.
- (C) No new headings can be used until they have been considered by this committee.
- (D) Where the heading chosen for a card might cause difficulty in finding it, "See" cards are inserted under any other headings which might assist the user of the index.

One result of the careful selection of headings and of the use of "See" cards is found in the fact that only very rarely is it necessary to insert duplicate copies of a card under two headings. At the same time no difficulty is experienced in finding references which have been filed.

When the headings have been finally approved, the slips are typed on cards for filing. Two complete sets are kept in the library, one set under subject headings and the other under authors.

Copies of all new cards are circulated to members of the scientific staff, and a copy of every card is sent for retention to the member who produced it.

SOME NOTES ON THE LIBRARY SERVICE OF A LARGE INDUSTRIAL CONCERN.

Communicated by Dr. N. A. HALBERTSMA (Technical Publicity Department of the Philips Electric Lamp Works, Eindhoven, Holland).

THE NEED FOR SPECIAL LIBRARIES.

While public libraries are of great benefit to the general user, even the best are hopelessly inadequate for the needs of the specialist.

The only successful way of building up such special libraries (which are best founded in the natural centres of the science or industry concerned) is by concentration of effort, combined with the active support of all parties interested. There should be collaboration too with Institutes providing instruction in similar spheres.

THE INTEREST OF INDUSTRY IN SPECIAL LIBRARIES.

Although, as a matter of fact, industries are much interested in the establishment of special libraries, the degree of interest and the possibilities of support by them should not be over-rated; firstly because the larger industrial concerns already have special libraries; secondly because special libraries are of comparatively little importance in creative research work unless the data contained in technical and scientific literature are fully up-to-date.

It seems unavoidable that the information contained in books, should always lag behind the actual advance of science, which is a considerable drawback, especially in new fields.

In spite of these limitations, there is no question as to the usefulness of well-equipped special libraries, as is proved by the fact that many industrial enterprises have never relied on other libraries, but have established their own special libraries.

Both in the specialised sections of the public libraries, and in special libraries, the problems to be faced if efficiency is to be attained are similar.

THE PHILIPS SPECIAL LIBRARY.

The library of the Philips Electric Lamp Works at Eindhoven (Holland) may be taken as a typical example; the industry is a highly specialised one which is progressing rapidly; there is much money spent in it on scientific research work both pure and applied.

There are 8,500 workers engaged in the factory, and the staff of physicists, chemists and mechanical and electrical engineers amounts to 110. The research laboratory consists of 66 rooms, covering an area of 22,000 square feet.

The factory being situated in a town of 60,000 inhabitants at some distance from intellectual centres, a complete library of physical and chemical textbooks and periodicals is of importance.

The Philips special library covers the whole field of lamp making, wireless valves, rectifiers and X-Ray tubes.

Of the material in the library the chemical and metallurgical publications are mainly of interest to the chemists working on tungsten; there are data on high vacua and the behaviour of metals at high temperatures for the physicists; the engineers connected with the Argon—and Neon—producing plant require literature on low temperatures, inasmuch as these gases are distilled from liquid air; modern views on the structure of the atom are of great importance in all work connected with the emission of electrons and with X-rays; literature on illumination engineering is required when new uses for electric lamps are under consideration, or lamps require to be adapted to special circumstances.

Weekly meetings of the scientific staff are held; lectures are also given by prominent scientists at the invitation of the Director of the Research Laboratory, Dr. Holst.

THE CONTENTS OF A SPECIAL LIBRARY ALWAYS COSMOPOLITAN IN CHARACTER.

A complete collection of specialised literature will always possess literature in various languages. Even if articles published abroad appear in abstracted form, the fact remains that full information can only be obtained by studying the paper in the original language. A good knowledge of the technical terms occurring in the English, French and German languages, is an imperative qualification in the special librarian. As it is impossible for one person to know all the languages of Europe, some means will have to be provided for translation into one of the three basic languages, mentioned above. The organisation of a good translation service will be one of the most difficult problems facing special libraries.

The following figures indicate the languages used in the books (including bound volumes of periodicals) at the Philips Special Library:

	Dutch	English	French	German
Physics and Physical Chemistry	17	117	24	245
Chemistry and Metallurgy ..	6	52	16	268
Illuminating Engineering ..	13	104	18	128
Mechanical and Civil Engineering	58	15	—	225

The following figures relate to current periodicals only:

	Dutch	English	French	German
Physics and Physical Chemistry	36	9	4	8
Chemistry and Metallurgy ..	4	25	9	17
Illuminating Engineering ..	1	11	2	16
Mechanical and Civil Engineering	8	21	4	23

Included in the above figures are the contents of a section of the Library dealing solely with Patent specifications and abstracts.

FILING.

Technical and scientific literature is rapidly increasing in volume. Even the highly specialised specialist is unable to read everything published in his own line, and finds it moreover increas-

ingly difficult to keep track of what he has read. Every scientific worker, therefore, is faced with the problem of how best to file the information contained in his literature, a problem that is seldom dealt with in a scientific or systematic way. The difficulty is increased by the impossibility of judging of the importance of a publication at the moment of its appearance. There is also the fact that many articles appear, in slightly varied form, in different periodicals; these variants cannot be neglected without running the risk of missing additional information.

In the opinion of the writer, therefore, everything should be filed without criticism. The additional, and it might be thought unnecessary work caused by this principle, is of small importance provided the filing is done as mechanically as possible.

When after some years, the literature on a certain subject is examined, the person making a special study of a subject is the very best man to read over everything that has been filed and select that is considered important from his point of view. It was on this basis that an "Illuminating Engineering Index" was started about 15 years ago, when this branch of applied science was first evolving.

PATENTS AND SPECIAL LIBRARIES.

By H. E. POTTS, M.Sc. (Chartered Patent Agent).

The main object of this paper is to discuss whether there are any important differences between searching and indexing for the purpose of patent investigations and for other purposes. I propose first to say a few words on publication as regards patents and then to discuss some of the requirements of the patent investigator, and finally to make a few remarks on indexing. I should particularly value any suggestions which may be made as to the best method of indexing, and I should also like to hear something as to the methods of searching employed by other investigators, and the length of time which they consider necessary for this purpose.

Before beginning my subject, I should like to throw out the suggestion that the problem of indexing might well form the subject of a thesis by a graduate in philosophy at one of our Universities. Indexing and searching acutely raise one of the oldest philosophical problems, viz., that of classification, and it seems to me that the problem is well worth further study from the theoretical point of view. In some ways I suppose that no system of mechanical indexing can equal the human brain with its wonderful mesh of cross-references formed by the inter-connected neurones. The brain has one remarkable property which does not appear to be found in any mechanical system, viz., that the mesh of the neurones can be polarised by the presentation of a given subject on which further information is required; a fresh focus is then created in the brain, and the relevant data which are present in the brain may be said to converge automatically upon this fresh focus. The brain therefore possesses what may be termed an automatic adjustment of its cross-references. It is this property which suggests that the ideal index would be the brain of a man like the famous brother of Sherlock Holmes, who could retain the whole of the relevant information in which he was interested in a state of perfect co-ordination.

Unfortunately patent literature is mentally so indigestible that it is extremely difficult for a man to co-ordinate it in his memory, whereas, to a certain extent, it is possible for a research worker to remember the material which he considers valuable, and in his case the index is rather for the purpose of reminding him of something which he has already considered than for the purpose of enabling him to search for something he has never seen. Thus, although effective search presupposes efficient indexing, it would appear that for patent purposes the stress should be laid rather on the searching than on the indexing.

1.—“ Publication ” as it affects patents.

Let me first state a general characteristic of a patent. It is only valid if there has been no publication of the subject matter

prior to the filing date of the application. For patent purposes, we are therefore constantly faced with the problem of determining what information was actually available to the public at a given date.

(Here followed a discussion of "publication.")

It will be seen therefore that the information must be "available to the public" and the precise date of this information may be of vital importance. Therefore it follows that librarians should take special care to be able to establish the date on which any given publication was not only received but was further made available to the public.

2. One object of the special library therefore is to give information as to the state of the art at the date of a given patent specification, and it will be seen that those interested in patents are mainly preoccupied with the subject of searching rather than the subject of indexing. Still successful search presupposes adequate indexing and the main question I wish to raise today is to ask whether there is any difference between the requirements of indexing for purposes of patent searching and the requirements for research workers or for use of the library as an information bureau.

3. Let us examine a little more closely the particular reasons for which search is necessary when dealing with patents :—

(a) From the point of view of the inventor, it is necessary to search in order to see whether anything new has in fact been discovered and if so, to ascertain how new the disclosure is. It is not sufficient to know that the particular solution of a difficulty is patentably novel ; we can only obtain adequate protection if we know the furthest limit of the prior proposals so that we can generalise our discovery and draft claims which will protect the likely variations which may be made by possible infringers.

(b) On the other hand, from the point of view of the manufacturer who finds that his competitors have obtained patents, a search is necessary in order to demonstrate the invalidity of such hostile patents or to restrict their scope by enabling him to devise a non-infringing construction.

(c) Finally, it is very desirable to search the patent literature at the outset of a research, not only from the point of view of obtaining ideas, but also to determine which portions of the field are most free from hostile patents. If there are two equally likely lines of research development, it is obviously wiser to concentrate our efforts on the line which is least embarrassed by hostile patents, although I doubt very much whether many research workers actually adopt this salutary precaution.

The above three objects could all be met if the ideal of the special librarian could be obtained, viz., a complete and fully indexed documentation of the whole of the world's literature. Except in very rare cases and in a restricted field, it is probable

that such documentation could never be obtained in practice. It is therefore necessary to compromise by considering a selected portion of the field and we now ask whether this selection must be performed in any special way for the purpose of patent investigations.

4. It appears to me that there is a broad distinction which is extremely difficult to express, but it may be illustrated by stating that the research worker is largely interested firstly in observations and secondly in theories. His index therefore ought to contain a great number of headings which in the Kaiser system would be process terms relating to various theories and hypotheses. On the other hand, many people appear to have the impression that the function of a special library is to provide a mass of material which is indexed in such a remarkable manner that when the Chairman of the Board of Directors telephones down for the available information on a given subject within the next ten minutes, the special librarian will turn to his magnificent index and proceed with unerring accuracy to pick out half a dozen extracts which represent the concentrated distillation of the world's wisdom.

Now the task of the patent investigator is entirely different. He is not mainly interested in theories and he is never rash enough to believe that an adequate search can be made rapidly. He is chiefly concerned, not with finding solutions to a problem like the research worker, nor with finding the most useful information in a concentrated form like the information bureau, but with finding *all proposals* as distinct from theories, which may anticipate any proposals he is now investigating. While the research worker starts out with a desideratum and endeavours to find data which may be helpful, the patent investigator starts with a datum and endeavours to find whether it has been anticipated by other data in the past.

The patent investigator is nearly always willing to spend several hours or days in his search and in many cases he is prepared to spend weeks or even months. One reason for this necessity may be found in the fact that no indexer can possibly index a given publication under such minute sub-headings that at some future date it will be found isolated in a small group with say half a dozen similar publications. Again, invention may reside in apprehension and utilisation of a point so small that it would appear to the indexer as absolutely unimportant. A further difficulty arises from the fact that patent specifications themselves, which form a great part of the anticipatory literature of the patent investigator, are often replete with ambiguous and apparently irrelevant statements. Even when I have a given invention before me and am confronted with a given alleged anticipation, the nature of the earlier document may be so ambiguous that it may take me an hour to determine whether anticipation exists or not. If this is so, even when I have the new document alongside the old one, how would it be possible for the most far-seeing indexer to arrange the material so that I

could decide the question in a shorter time when I consult his index at some future date? There is a real difficulty here even if the indexer attempts to index under all likely heads. The ambiguity may bring the item under a very unlikely head.

5. These fragmentary considerations may indicate that the ideal for the patent investigator is to have his material arranged in classes which should not be small since otherwise an enormous number of cross references will be necessary. The ideal system for patent search is probably that of physical separation of the items into groups of reasonable size so that the process of searching can be performed by turning the material over leaf by leaf. Thus for patent purposes we require the references to be very closely associated with the index.

Of course a classification based entirely on physical separation would involve the use of many copies of certain items. This difficulty can be overcome by cross-indexing. On the other hand, if the physically separated classes are too large, the leaf by leaf search becomes laborious and we must again resort to sub-indexing.

6. Let us consider for a moment how the various Patent Offices of the world have dealt with this problem. The system of the British Office is in my opinion a superb achievement. The whole of the British Patent specifications have been abridged and collected into the well known volumes of abridgments, and these have then been indexed by a liberal use of cross-indexes and a complete disregard of the distinction between process terms and concrete terms, which, however it might horrify Mr. Kaiser, is found in practice to give excellent results. It is instructive to compare this system with that which prevails in foreign countries. In the U.S.A., Germany, or France there are no abridgments which resemble ours in scope and accuracy. The German specifications are indexed in a very large number of classes and sub-classes, which latter are physically separated into small groups, so that once one has ascertained which is the correct sub-class, searching can be performed by the leaf by leaf method. It will therefore be clear that many individual specifications ought to fall into each of a large number of sub-classes, but this system of single entry of each specification in its proper sub-class does not provide the necessary cross-indexing and therefore the German system is apt to give disappointing results.

On the other hand, the French system, or absence of system as I should prefer to call it, consists in grouping the specifications into a relatively small number of classes, each of which contains an enormous number of specifications, so that if one desires to make a search on a given subject, one may have to turn over 1,000 specifications leaf by leaf.

7. Perhaps it will illustrate my views as to the methods of searching and indexing if I mention the method I have myself adopted in making an exhaustive index of a particular field of

chemical inventions upon which I have been working for the last two years. After studying the Kaiser system, we decided that a simpler system would be better for our purpose, since we thought that it would be impracticable to provide half a dozen index cards for each item. The system we ultimately evolved was to cut out the British abridgments and to mount them on large cards, which we then physically separated by guide cards having tabs, and we were careful not to carry the sub-division too far. The detailed sub-division was performed by cross-indexing by means of small detachable flags of about eight different colours.

We then proceeded ourselves to make abridgments of the relevant German and American patent specifications, except when these duplicated those contained in the British list. For our purpose we decided to make very brief abridgments of specifications likely to be unimportant and fuller abridgments of the more relevant ones.

Some time afterwards we discovered from a publication in the Journal of the American Patent Office Society that a very similar system is in use in the British Patent Office, and I venture to suggest that it would be useful if the British Office could publish fuller details of its system, together with some indication of the sub-classes used.

It will be seen that this system is a self-indexing one in that we do not employ index cards for each item of information, since the abridgment itself serves for that purpose. When using the system, we consult all likely and many very unlikely abridgments, and then we go to the ordinary specifications in extenso in any case in which information appears possible to be of value. I think it is most important to maintain a high ratio between the full specifications consulted and the abridgments which have been perused.

In addition to this, however, any important matter forms the subject of a search, which is sometimes very prolonged, in the indexes of the various scientific abstracting journals, and in some cases in foreign patent specifications. For example, in one important case, after searching for about four days, the only anticipation we found was contained in a Norwegian specification which, by the way, did not appear to be indexed anywhere. We only traced it by finding an abridgment of a Canadian specification of a Norwegian inventor. The full Canadian specification was not published, and this abridgment was not an anticipation, but it suggested the desirability of searching the Norwegian literature, and this proved the solution of the difficulty.

8. Mention of the scientific journals suggests another peculiarity of the patent literature, viz., that for apparatus patents it is extremely difficult to search in technical journals, partly because they are so badly indexed, and hence the main source of anticipation for apparatus patents is to be found in patents. One reason for this difference may reside in the fact

that chemical literature is relatively easy to index because the chemical structure of the substances affords a natural and logical basis of classification, whereas in classifying apparatus it is extremely difficult to find an inevitable method. The U.S.A. Patent Office experienced great difficulty in deciding whether to classify apparatus by structure or by function. If we have a rotary shaft with beater arms of a special shape, are we to classify it by function, i.e., as an egg-beater, a concrete mixer, etc., or are we to classify it by structure in a group which will contain both egg-beaters and concrete mixers, provided they combine shafts—rotary—with beater arms? This point demands consideration, and the electrical and engineering journals certainly ought to be much better indexed, as the present chaos is disgraceful.

9. Finally, I have to put forward a definite proposal, viz., that this association might find it possible to obtain from the British, German, Dutch, American, and Swedish Patent Offices the full particulars of the methods of indexing and searching which they employ, since this information might be of great value.

THE DUTCH PATENT OFFICE.

Contributed by F. DONKER DUYVIS (Nederlandsch Instituut voor Documentatie en Registratuur).

The examination service of a Patent Office may be regarded as a large bibliographical research bureau ; its organisation is, therefore, not only of interest to those who have to deal with patent matters, but to all engaged in systematic research in specialised fields.

THE OBJECT OF THE SEARCH is to ascertain whether a process or apparatus is novel, whether it really shows "inventive" merit and is capable of being made use of technically and further whether it fulfils some formal requirements. It is clear that the subject of an application is fully anticipated, the examiner does not pursue his search further ; in many cases, therefore, he will not have to collect a complete file of anticipatory matter.

The Dutch Patent Office examines about 34,000 applications annually, a staff of specialists is essential (40 technicians). In view of the legal consequences of their work the examiners carry a heavier responsibility than the officers of an ordinary information bureau ; they should have a thorough knowledge of foreign languages, of their special subject and of Patent Law.

THE MATERIAL available for search may be divided into two parts, that directly available for the examiners, and that centralised in the library. The more important material is, as far as possible, decentralised and divided among the examiners.

The material found in an examiner's room consists of :—
(1) American, British, French, German and Dutch specifications ;
(2) Handbooks and manuals relating to his special subject ; (3) A card index of current periodical literature ; (4) A card index of Dutch Patent Applications in his subject. All this material is classified systematically.

In the Library are centralised : (1) The specifications of various countries, classified chronologically (that is according to the issue numbers) ; (2) The registers, bulletins, etc., issued by the Foreign Patent Offices ; (3) General manuals and handbooks ; (4) Periodicals ; (5) Literature on Patent Law.

THE CLASSIFICATION in use in the Dutch Patent Office is almost identical with that in use in Germany, except with regard to the U.S. Patent Specifications, which are classified according to U.S. usage. Books are classified in the same way as specifications.

At the German Patent Office the system consists of 89 classes, alphabetically arranged and divided into sub-classes, which in turn are sub-divided into groups, of which there are 8,000. In the Dutch Office there is further sub-division, making some 10,000 groups and sub-groups in all. In translating the system from German into Dutch the alphabetical arrangement of the main

classes was lost, so that there is not much system left in this classification. A German alphabetical index containing about 32,000 entries for the 8,000 groups is used by searchers who are not acquainted with the system.

Although the main classes of the German classification are "functional" in character, the sub-classes and groups are often on a "structural" base. From the point of view of Patent Law the principle of an apparatus or process invented is of more importance than the particular use of an invention; a "structural" classification is therefore to be preferred for purposes of preliminary examination. The classification of the U.S. Office is more suited to the purpose of research on "structural" principles. It might be asked why the Dutch have chosen an out of date classification, which meets with the unqualified approval neither of themselves nor of the Germans. The reason is of importance not only to Patent Offices, but to all large bibliographical bureaux: The fact that a system of classification is to a certain extent standardised gives it an economic advantage over an unstandardised classification that may be superior from a logical or systematic point of view. At present the Patent Offices of Norway, Denmark and Austria use the same classification as Germany and Holland, with consequent economy of work in each of these countries.

It is for this same reason that the Dutch Office uses the American classification for the U.S. Patent specifications. Recently the Swedish Patent Office has adopted the American classification for filing all foreign specifications.

Classification requires a special staff. In the Dutch Office all specifications used for purposes of search pass through a central classifying department. The German specifications already bear a class number; French and British specifications are looked through and provided with the German number. The U.S. specifications are provided with the U.S. class numbers with the aid of the numbered lists issued by the U.S. Office.

This preliminary classification might be greatly simplified if all Patent Offices would print the class numbers of their own classification on the Patent Specifications they issue. By so doing the German Patent Office has not only rendered great service to sister-offices, but to a large number of individuals who have occasion to classify patents. The same applies to the French Patent Office, although the classification here is rather superficial. It is desirable that the British and U.S. Patent Offices should follow the German practice on this point.

In the Dutch Patent Office the specifications after the preliminary classification in the central department are distributed amongst the examiners. Each examiner has on an average 250 subject groups of the classification under his supervision. The examiners being specialists control the classification from a specialist point of view and make corrections if necessary. Sometimes they will decide that a specification does not fall within their

special branch and will send it to another examiner. It may be that the specialist does not see the general implication and so, by mistake, places some of the documents wrongly. A third stage in the work of classification is therefore necessary, the official responsible for the preliminary classification being given the final say; he it is who decides whether the decisions of the specialists need revision. While superficiality is the weak point of the general classifier, overspecialisation is the drawback of the specialists' work. Only collaboration between specialists and general classifiers can give the best results.

The Patent Specifications belonging to one group or sub-group are filed under the nation concerned, in a cardboard folder, which is in turn placed in a pigeonhole. Each pigeonhole may contain two or three (sometimes more) folders, so that the examiner may be enabled to find straightaway all the patent specifications bearing on a particular subject.

No cross references are made from a subject group to individual patent specifications in another group. Speaking generally, references are only made from group to group. As the groups of U.S. Patent specifications bear the U.S. class numbers, a special reference code is constructed to co-ordinate the German-Dutch and the U.S. class numbers.

THE EXAMINATION in various countries differs somewhat in character. Mr. Potts remarked on the excellent work of the smaller countries; comparisons are odious; I would mention, however, that although in my experience of Patent work I have sometimes observed that anticipations of an invention have been found in the smaller Patent Offices which had not been observed in the larger, yet I remember examples in the opposite direction. As a matter of fact, whilst the larger offices have larger collections of material for research, the smaller offices have two advantages, since their examiners generally have a better knowledge of languages and (what is more important) have each to survey a larger field of engineering, which tends to prevent overspecialisation. I stated that in large Patent Offices anticipations were sometimes overlooked; this is due I think to the fact that the examiners concerned survey only a very small branch of engineering and are not aware of what has been published in closely associated fields. To prevent overspecialisation in large offices it is advisable that the field of research should not be sub-divided into as many parts as there are officers, but that two or more officers should together survey larger fields. It is desirable, moreover, that the same man should not always deal with the same small sub-division.

For the reasons given it is obvious that I cannot agree with the argument often advanced in favour of a central international office for patent examination, which it is claimed would allow very thorough specialisation and improvement of the examination. I do not believe that such specialisation would in fact improve the accuracy of examination.

The reports in which the Dutch examiners summarize the results of examinations are nearly always accompanied by

exposition and in this respect differ widely from the short clear statements contained in the Reports issued by the U.S. Patent Office. Even the correspondence between the Dutch examiner and the Patent applicant takes sometimes the form of a theoretical scientific discussion—an example, I am afraid, of our national love of theorising.

Mr. Potts remarked that the examiners' reports on mechanical and electrotechnical inventions always cite patent literature and seldom refer to periodical literature or books, whereas the chemical examiners often find anticipations outside patent literature. He wondered whether there are differences in the methods of examination practised by these two classes of examiners. As a matter of fact most "structural" inventions (if anticipated) are found to be described in patent literature and it is but seldom that a new and unpatented "structure" is described in periodical literature. It is for this reason I think that the examiners in handling a "structural" invention, begin their search in patent literature; if they find anticipation they need not search further, as I have already mentioned. On the other hand processes are quite often described in scientific papers, etc., which are not to be found in patent literature, so that the chemical and technological examiners have usually to search material outside the literature of patents. The facts observed by Mr. Potts are not so much due to the examiners as to the peculiarities of technical literature.

THE PATENT OFFICE AS AN INFORMATION BUREAU; in most countries this development has not proceeded far, though most Patent Offices, to be sure, supply information on patent matters. The great amount of material amassed in those offices is capable of being of immense service to industrial and scientific research. The British Patent Office in issuing its class lists has been of great service in this respect; the staff of the German Patent Office has also rendered excellent service to chemical science (see Friedländer "Fortschritte der Teerfarbenfabrikation," and Bräuer und d'Ans, "Fortschritte in der anorganisch-chemischen Industrie").

In Holland also attention is given to this matter. About 1,500,000 patent specifications are classified systematically in files in the examiners' rooms; for various reasons the public cannot be allowed to consult these files, but in order to make this collection of use for purposes of industrial research, officers of the Dutch Governmental Industrial Intelligence Service are allowed access to the files, thus forming a connecting link between the Patent Office and the public. There is a photostatic service at the Patent Office which supplies copies of patent specifications and other literature to the public.

The question has been asked whether the classifications used for Patents are helpful to members of the public wishing to study patent literature from a technical point of view. For purposes of preliminary examination the "structural" form of classification is very desirable; but for industrial purposes the "functional" arrangement is preferable, though the first form of classification is sometimes useful. The only way in which every demand can be

met is to employ a classification which by a system of cross-references enables the user to group the literature both from the "structural" and from the "functional" points of view. The only available classification that is suitable for the purpose is that of the Institut International de Bibliographie. Actually the Dutch Patent Office supports the Dutch Institute of Documentation in issuing lists of current technical literature; these will give about 15,000 titles a year, classified according to the principles of the Institut International de Bibliographie. By this means the material available for research by the public will be enlarged.

THE PUBLISHER AND RESEARCH LIBRARIES.

By B. N. LANGDON-DAVIES, M.A. (Labour Publishing Co., Ltd. ; Theosophical Publishing House, Ltd. ; Noel Douglas).

I have been asked to say a few words as an introduction to a discussion on the relation of the publishing world to the objects of this Association. The subject was, I believe, dealt with at a discussion of the Faraday Society, under the chairmanship of Sir Robert Hadfield, in 1918. I may go over again some of the ground then traversed, and I shall certainly omit many of the matters that call for consideration. In the few minutes at my disposal I propose to touch on two or three subjects only, and that in a necessarily brief and consequently dogmatic manner.

The first point I wish to make is that the supposed conflict of interests between publishers and libraries does not in fact exist. It is true that publishers make money by selling large numbers of copies of a book, while the object of libraries, and particularly of such libraries as are here represented, is to make a few copies available for a large number of readers. But publishers who are worth considering are not solely concerned with the acquisition of dividends and, even though the commercial motive must almost always be one of the chief considerations, large sales are not essential. Research works are not in the nature of things best sellers, and the necessary adjustment of price to admit of a reasonable profit on an edition of 1,000 instead of 1,500 is a simple matter. In the long run it means that, if the research libraries are efficient, less capital is sunk by the publishers in each particular book, the same ratio of profit is obtained, and consequently a larger number of different books can be produced. Certainty of sale is to such publishers as we are considering of vastly greater importance than the gamble for possible "scoops."

In what, then, does the efficiency of the libraries, from the publisher's point of view, consist ?

There are one or two desiderata that I wish to mention as coming within my own experience, leaving it to others to elaborate and supplement them. The first is that the libraries must not neglect, through inadvertence or prejudice, new sciences or spheres of study which come into existence. Darwin was probably ignored or banned by a previous age. This age must avoid the mistake of ignoring or banning books on new political, social, or religious thought. I know that it is almost impossible to publish in this country great standard works on Socialism or Labour History without subvention or assistance of some kind. I imagine that the same thing applies to books on many social and religious subjects. The chief reason is that few libraries in this country as yet regard those themes as suitable for their shelves. Japan is not by any means a happy home for advanced political thought ; but its libraries give a more ready welcome to such books than do those of Great Britain.

In the second place the libraries must not, as do most book-sellers, neglect the vast armies of students that universal education has produced. The mills of Lancashire and Yorkshire, the coalfields of Wales and Scotland, even the multiple shops and distributing centres of London and Edinburgh abound in young men and women avid for study, if they can but obtain the means. A few years ago, when wages were high, an edition of six thousand of such a book as the Webbs' *History of Trade Unionism* or the Hammonds' *Village Labourer* sold out in two or three months without one copy passing through the ordinary channels of trade, or, indeed, going to the libraries. At the same period travellers on commission found it worth while to collect from cottagers weekly payments almost in pence for copies of such books as H. G. Wells' "*Outline of History*." I have myself the experience of 20 per cent. of an "on sale or return" order of 500 copies of a serious work of general interest being returned as unlikely to sell from Messrs. W. H. Smith, and of selling 10,000 copies of the book within the next six weeks. The immense growth of the Workers' Educational Association and the National Council of Labour Colleges are evidences of the same thing. The retail trade will not or does not cater seriously for this immense market, and at the present moment of depression, the retail trade has some justification. But the libraries have therein their opportunity.

Thirdly, and finally, the libraries need to get into direct touch with the serious publishers. Such publishers are only too glad to be informed of books that are required; while, incidentally, booksellers are only too glad to be informed of the existence of books the purchase of which they can advise. The means of establishing this contact have recently taken form in the National Book Council, an organisation composed of all interested in the promotion of reading. If such an association as that which convened this Conference could establish regular and efficient co-operation with the National Book Council, a publisher faced, as I and doubtless many others are faced, with the problem of whether or no to undertake the publication of large works certain to be of value to thousands of students but equally certain to be bought only by about two hundred of them, might be able to proceed far more often than he is now. The Council aims at increasing the demand for and consequently the supply of books. The Association aims at bringing to the student that information which can only be obtained through books. Surely it is a case for the closest co-operation.

* * *

Dr. E. A. BAKER, (London University School of Librarianship): You will remember that there were frightful revelations from Mr. Lawley about the way in which theses for degrees are written. It appears that when a man wants to write a thesis he sends to an information bureau and gets all the spadework done for him.

Mr. STANLEY UNWIN (National Book Council): May I add one word about the National Book Council, which, as Mr. Langdon-Davies has said, has two objects and two objects only, namely: the promotion of the habit of reading, and the wider distribution of books. Mr. Langdon-Davies has emphasised the fact that there is a large clientele, whose need is not being

met. I believe that there is a much larger clientele still that does not realise any need at all for books. These people have, it is true, learnt to read, but have not yet advanced beyond the stage of what one may term newspaper and magazine reading. A group of us have felt for a long time that collectively we might do a great deal to remedy this trouble, and we have at last persuaded authors, booksellers and publishers to co-operate to this end. It is true that as a class we are all biassed in our love of books and our desire to encourage the book-reading habit; but, fortunately, it is a bias that is shared by all intelligent people. I have accordingly no hesitation in inviting you all to co-operate and assist us in this movement, which has only started in the last fourteen days.

Major W. E. SIMNETT : I have been amazed all my life at the haphazard and ramshackle way in which books get born—a way which seems to put a premium on the principle of the survival of the unfittest. Having been connected for many years with the Workers' Educational Association, I have had practical experience of the difficulty which these students, most of them people unable to spend much money on books, have in getting the literature they want. I feel that the National Book Council should offer a useful way of securing co-operation between the publishers and those bodies which are specially cognisant of the needs of a great number of working class and other students. I think we can inform the publishers of the needs which they can with comparative safety supply.

I was present at the meeting of the Faraday Society concerning scientific publications, referred to by Mr. Langdon-Davies. It is a very thorny field indeed, but here again, through the National Book Council, scientific societies ought to be able to formulate their needs; it is a matter about which publishers naturally know very little. An organisation of this kind, in touch with scientific and technical societies, may do much good in that difficult field.

SCHOOL OF LIBRARIANSHIP: ANNOUNCEMENT.

Dr. E. A. BAKER: At the first Conference, at Hoddesdon, in 1924, there was a long discussion on the subject of the training of special librarians and their assistants. The meeting fully realised that the essential qualifications of a special librarian were identical in basis with those of general librarians; the same principles of library economy ruled in both cases. Accordingly, the courses of training which are provided by the School of Librarianship form the right foundation for the training of a special librarian. There is hardly a subject comprised in these courses which special librarians can safely neglect. At the same time a worker in a special library or information bureau must specialise in certain directions; and the question was raised whether the School of Librarianship could modify or extend its courses in the required directions.

In order to meet these demands, as far as is possible, the Committee of the School of Librarianship have introduced an advanced course this session on Abstracting, Indexing, and Classification, to be given on Tuesdays at 7 p.m.

FIRST TERM.

(Mr. W. R. B. Prideaux, B.A.) "Periodical Literature: Indexing and Annotation," four lectures.

Mr. B. M. Headicar.) "Library of Congress Classification and Alphabetical (Index) Subject Headings," three lectures.

(Mr. C. R. Sanderson.) "Parliamentary Papers and Official Publications," three lectures.

SECOND TERM.

(Mr. H. Jenkinson, M.A., F.S.A.) "Archaeological and Historical Sources: Inventories, Lists, Calendars, Indexes, etc.," four lectures.

(Mr. Robin Flower, B.A.) "Manuscripts: Description and Indexing," three lectures.

THIRD TERM.

(Mr. A. P. Thurston, D.Sc., F.R.Aë.S.) "Patent Specifications: Indexing (Historical and Practical)," three lectures.

(Mr. A. A. Eldridge, B.Sc., F.I.C.) "The Literature of Chemistry," three lectures.

FEES: Session, £2 12s. 6d.; Term, £1 1s.; any one section, 10s. 6d.

It is to be hoped that the members of the Conference and others interested will support this effort of the School of Librarianship by recommending their assistants to attend the lectures. The course is an experiment, and its success depends mainly on the members of the Conference for whose benefit it is being made. The School of Librarianship is not in a financial position to proceed further in this direction unless the course receives adequate support.

The School of Librarianship has arranged for an Easter Vacation School, at the British Institute of Florence (March 27th to April 10th, 1926). Lectures will be given on contemporary English and Italian Poetry, the Pronunciation of Modern English, and on various branches of Library Economy. The total cost, including fares, is estimated at £12.

SIXTH SESSION - - - - Sunday evening,
September 27, 1925.

Chairman :

Mr. A. E. TWENTYMAN, B.A.

**THE INSTITUTION OF MECHANICAL ENGINEERS
AND ITS LIBRARY.**

By Brig.-General MAGNUS MOWAT, C.B.E., T.D., A.K.C.,
M.Inst.C.E., M.I.Mech.E., M.I.E.S. (Secretary of the
Institution of Mechanical Engineers).

Scope of Paper :—

- A. The Institution in general.
- B. Its publications.
- C. Its Library.

A.

One hundred years ago on this very day (27th September), the first Railway in the world was opened; it connected the towns of Stockton and Darlington, a distance of 26 miles, and was constructed by the Founder and first President of the Institution of Mechanical Engineers, George Stephenson.

It is befitting, therefore, that this Conference, on a centenary such as this, should pay some tribute to the genius of Stephenson, whose work has so materially advanced the civilization of the world, and made possible many things—including directly and indirectly the “promotion of informational and library services,” which is the *raison d'être* of our gathering here in this “God fearing and law-abiding” city of Oxford.

The Institution of Mechanical Engineers has made steady progress, since its establishment in 1847, and has now a nominal roll (including its 6 grades) of close on 10,000 members. Among its past Presidents may be noted the names of George and Robert Stephenson, Fairbairn, Whitworth, Penn, Armstrong, Siemens, Bramwell, Hawksley, Anderson, White, Donaldson, and many others whose names are representative of the best traditions of Engineering.

Only qualified mechanical engineers who have satisfied the Council as to the soundness of both practical and theoretical training are admitted within the Corporation.

In addition to holding its own Entrance Examinations, the Institution co-operates with the Board of Education, the Scottish Education Department, and the Ministry of Education, Northern Ireland, in the award of National Certificates and Diplomas in

Mechanical Engineering to students who successfully pass through approved courses of instruction at a large number of Technical Colleges and Schools throughout the United Kingdom.

The Institution also has Representatives on the Courts of many Universities and other Bodies, such as the British Engineering Standards Association, of which it was one of the Founders.

Research is a matter in which the Institution has set an example for nearly fifty years, amongst the subjects investigated being Alloys, Castings, Cutting Tools, Friction, Gas Engines, Hardness Tests, Marine Engine Trials, Marine Oil-Engine Trials, Refrigeration, Steam Nozzles, Wire Ropes. Several of these Researches are still in progress.

B. PUBLICATIONS.

All Papers and Research Reports read at the monthly Meetings at the Institution's Headquarters at Storey's Gate, St. James's Park, Westminster, and a few of those read at the Local Branches in the Provinces, are printed, usually with discussions, in the *Proceedings*, which are issued in parts accumulating into two indexed volumes annually. A *Brief Subject-Index of Papers* published since 1847 is brought up-to-date by the Librarian every two years, and I have copies here which it will be a pleasure to present to any Delegates interested. *The Journal* is published ten times per annum, and is printed on blue paper to distinguish it from the *Proceedings*. It contains business matters of ephemeral interest, such as notices of forthcoming Meetings, Abstracts of the Papers, Lists of Candidates for Membership, Examination Pass Lists, and Reviews of Books. A few copies are available here, if desired by Delegates. A *List of Members* is published annually.

C. THE LIBRARY.

This contains some 20,000 volumes, housed in an appropriately furnished room with an outlook on to St. James's Park. It is of Elizabethan style, in Hungarian polished oak.

The CONTENTS are text-books, pamphlets, proceedings of societies, and periodicals on Mechanical Engineering and its endless ramifications which include the subject of Economics—now a compulsory section of the Institution Examinations. A recently-organised division of the Library consists of trade catalogues.

The CLASSIFICATIONS used are Dewey, and its Extension to the Engineering Industries by Professors Breckenridge and Goodenough, of Illinois University, and published in Bulletin No. 9 of their Engineering Experiment Station. Certain modifications to suit our particular conditions are, of course, adopted—Dewey should not be used blindly, but, if properly understood and applied, has the advantage of being the most generally known classification.

Card CATALOGUES are kept of Subjects, Authors, Periodicals and Transactions, and Trade Catalogues. In all these, a simple alphabetical system is adopted—Dewey is used only for the shelf arrangement. A printed catalogue has not been issued for some time, but the monthly JOURNAL issued to members includes a list of the Additions to the Library, with short REVIEWS written by the Librarian, and particulars of Publishers, price, size, etc., sufficient information being furnished to indicate the scope of the books. This feature of the Library work is of particular value to members abroad and in the provinces, in enabling them to keep *au fait* with new literature, and is used as a guide by several other libraries.

PAMPHLETS are kept in Dewey order in Fincham's Public Library Boxes, but clippings are rarely made, it being considered better to leave articles in the files of periodicals which are readily accessible, have their own indexes, and are largely covered by the various bibliographical indexes. I am aware that this view is not in agreement with much of the work described in other Papers at these Conferences, but I think unnecessary labour and indexing can be expended where clippings are made on a large scale. In some industries it may be necessary, but not where the industry is covered by existing REFERENCE INDEXES, such as the following, which, amongst others, are used at the Institution :—

- (1) *The Engineering Index* (annual and monthly issues).
- (2) *The Cleveland Technical Institute Bulletin* (monthly with annual index).
- (3) *Science Abstracts*: Physical and Electrical (monthly with annual index).
- (4) *Engineering Abstracts* of the Institution of Civil Engineers (foreign only) (quarterly).
- (5) *Monthly Bulletin of Information on Refrigeration* of the Institut International du Froid (with annual index)
- (6) *Subject Index to Periodicals* of the Library Association.

It is a matter for regret that the *Repertorium der technischen Journal—Literatur*, formerly compiled by the German Imperial Patent Office, no longer appears. Another index which has ceased publication is the *International Catalogue of Scientific Literature*. Of the foregoing, the easiest to use is (1), and I have recently been consulted as to possible improvements in this invaluable index; (2) deals mostly with metallurgical matters; (3) would be greatly improved by a simple alphabetical subject-index; (4) is discounted by British publications not being included; in (6) will be found a curious mixture of natural and applied science under Section K, bringing Epilepsy into juxtaposition with Equations, Omnibuses next to Onions, Oxy-Acetylene Welding next to Oysters; but its weakness for my purpose is that alone of the indexes mentioned, it is never issued up-to-date, a matter which a grant from the Carnegie Trustees might remedy. All these works, however, combine to serve a valuable end, and

if adequate use is made of them and of many other bibliographies issued by scientific societies, a saving in over-indexing should be effected. It is possible, too, for card-indexes to become unwieldy. Rapidity of reference is very desirable, when telephone or personal calls are received.

CO-ORDINATION IN SIZES of books and periodicals is a matter in which there is room for progress. In America, a start has been made with such journals as the fine series issued by the McGraw-Hill Publishing Co., including *American Machinist, Engineering and Mining Journal-Press, Engineering News-Record, Chemical and Metallurgical Engineering, Electrical World, Electric Railway Journal* and *Power*. Other journals have fallen into line, such as *Railway Review, Mechanical Engineering, Combustion, Journal of Engineering and Industrial Chemistry*. In this country there is little attempt at uniformity, although the same size of Proceedings always adopted by the Institution of Mechanical Engineers since 1847 agrees with that of the Institution of Civil Engineers, Iron and Steel Institute, Institute of Metals, Institution of Automobile Engineers, Manchester Association of Engineers, etc.

BOOK SELECTION is made at the Institution in the following way. The Librarian compiles a list of new publications each month, adding thereto any others enquired for or coming to his notice. Two columns are drawn, in the first of which his opinion is entered, in the second the opinion of a member of the Council, who, also being the Editor of a great Engineering newspaper, receives most of the books for review. The Library Committee then decide, but the number of books purchased is comparatively small, only the best being selected. The reviews in the monthly *Journal* constitute a valuable advertisement, and most Publishers present their technical books for that purpose. Old books are not much sought after, most enquiries being for the latest information. There are in the building a few old volumes, but the object of the Library is to be a useful working tool—not a Museum.

USE OF THE LIBRARY is by open access, but every member appearing is approached personally in order that he may be advised as to what will suit his requirements best. Much of the work also is by correspondence, and enquiries are rarely made simply for a specific book, but are usually for information on engineering problems and processes, as, to take a few recent examples: (a) the best lining for wire rope pulleys; (b) nail making machines; (c) effect of superheated steam on metals. Duplication of enquiries is rare. BOOKS ARE LENT to members personally or through the post, up to 14 days, and are carefully selected to meet the needs of each case. No charge is made for this service or for searches, and the privilege is utilized by the members to an increasing extent. Photographs of articles are made, if desired, a charge being made for this, but—in view of the high cost of the machine—no photostat apparatus has yet been installed.

THE READING ROOM contains the current numbers of over 300 periodicals and transactions, a file of all of which is preserved for at least 12 months, the principal being bound for permanent preservation in the library.

Concluding, I would regret the enforced absence, through another professional engagement, of the Institution's Librarian, Mr. Alfred R. Stock, F.L.A. He, however, particularly wished me to give you this Paper, and I must express my indebtedness to him for information supplied. The Library has made rapid progress within the past five years. This is largely due to a re-organization made in 1920, prior to which the Library staff had been responsible for other Institution work. Since, however, the Librarian has been able to devote his time entirely to developing the Library, its usefulness has materially grown, and many gratifying comments have been received as to the advance in this section of the Institution's activities.

TRANSPORT INTELLIGENCE AND PUBLICITY.

By Major W. E. SIMNETT, M.B.E., Associate Inst.C.E.

The industry of this country, and indeed, its whole social and economic life, is peculiarly dependent upon its transport system, and it is therefore of the highest importance that that system should function with the greatest possible efficiency and economy, and that, as one means to this end, its responsible administrators should keep closely in touch with developments and improvements affecting transport methods, equipment and technique throughout the world.

It is also of importance to the transport industry itself that the trading and travelling public should be informed alike of its possibilities and limitations, and should be encouraged to make the fullest use of facilities offered, and to co-operate in every way with the transport service, to the mutual advantage of both service and public.

There are thus two aspects of this question: the collection and dissemination of information for the technical benefit of the transport undertakings themselves, and the organisation of publicity as between the transport service and the public.

The most important transport agency in this country is its railway system, and these notes will therefore be confined chiefly to the railways, although much of what is said applies also in some measure to other forms of transport in which the railways are themselves interested, or by which they are affected.

Dealing first with the question of intelligence, there is, in this country, no organised means, apart from the technical press, of obtaining or distributing information relating to railway operation or administration, for the benefit of the officers and staffs engaged in such work. Individual officers do, no doubt, endeavour to keep themselves informed to some extent, but isolated effort of this kind is obviously of little use in the absence of organisation.

The late Sir William Acworth once told me that, in his experience, British railway officers were not very well informed as to what was going on in other countries, and he had long hoped to see a central information office established for this purpose. We are the pioneers of the world in railway development and technique, and are still inclined to be a little independent of what the experience of other countries may teach us.

A beginning was made in the systematic provision of transport intelligence on the establishment of the Ministry of Transport. Unfortunately, it did not get beyond a beginning, and its benefits were confined largely to the Ministry. It was part of my duty, when I became a Director of the Ministry, to organise an Intelligence Department. I had been in touch with railways, especially on the technical side, before and during the War, and both then and later, when serving on the Transportation Section of the Peace Conference, I was impressed with the need of an efficient

intelligence organisation. To some extent, this was supplied, during the latter part of the War and the Peace Conference, as I have indicated in my paper on the "Co-ordination of Technical Intelligence," and the immediate needs of the moment were sufficiently served; but an emergency measure of this kind was not designed to meet the permanent requirements of a special industry in peace.

The intelligence service of the Ministry of Transport was organised on the basis of the report of the Haldane Machinery of Government Committee, and in spite of inadequate staff and Treasury restrictions it undoubtedly provided for all the needs of the Ministry during its short career. It dealt not only with special enquiries in the Ministry, but also with all foreign transport questions affecting British interests referred to the Ministry by the Foreign Office or Department of Overseas Trade, and with accredited visitors from other countries investigating transport questions in Great Britain. Its head acted as liaison officer for all League of Nations matters, and with other Departments upon questions affecting transport. A valuable Transport Library was built up, connections being established through the Foreign Office and British representatives abroad, with transport departments and undertakings of all kinds throughout the world. A Transportation Index was started, designed to form the basis of enquiry and research, which included all accessions to the Library and the records of the Intelligence Department, the contents of reports and of the transport press of all countries. In addition, a weekly Intelligence Bulletin was compiled, which was circulated throughout the Ministry, and to certain other Government Departments, and finally, before it ceased, to the principal railway companies. This contained a careful digest of the principal matters of transport interest appearing in the current technical press of all countries, and included official information received through the Foreign Office and Department of Overseas Trade, League of Nations publications and other sources, as well as a weekly list of accessions to the Library.

When this stage was reached, I suggested to the Minister that the Intelligence Service should be extended to include the railway companies in its facilities, and that a conference of companies' representatives be called to ascertain their views and requirements. At that time, however, the Railways Bill was being negotiated with the companies and other parties concerned, and piloted through Parliament, and every effort had to be concentrated to that end.

About the same time, the first Transport Conference of the League of Nations was held at Barcelona, and I then suggested that the International Communications Office, which was about to be established, should act as a clearing house of information for the transport departments of all nations members of the League. This organisation has since been fully occupied with the negotiation of treaties affecting international transport and communications; but although the collection and dissemination

of information is part of the functions of the Office, no organisation has yet been set up for this purpose.

After the Railways Act had been passed, as you are doubtless aware, the Ministry of Transport was drastically reduced, being the first and severest sufferer from the axe of its former Minister. All departments disappeared, except the Secretarial, the Inspecting Officers, and the Permanent Roads organisation. The Library remains, but is no longer specially cared for, and is purely a departmental collection.

Before this, however, I had proposed a scheme for the continuance of a transport intelligence service under the control of the railway companies, and this scheme was favourably considered by the General Managers' Conference at the Railway Clearing House, in the autumn of 1921 ; but the railway companies themselves, as then existing, were, under the provisions of the Railways Act, shortly to suffer the pangs of dissolution, and until the process of amalgamation was completed, no progress could be made with matters of this kind.

That process was legally completed at the end of 1923*, but as everybody will realise, it takes a much longer period for such a great consolidation to become really effective. That stage, however, is approaching, and the Big Four, as their internal organisation develops, find themselves compelled, under the pressure of common needs and interest, to build up more and more connective tissue, and to pursue a common policy in many directions. Still, there is no more provision for information and research than before the War, although the need for it, in these great centralised administrations, is probably more urgent than ever. I venture to think that, in this centenary year of British railways, the question of the organisation of a central information and publicity service should be seriously taken into consideration.

Such a service could best be organised under the aegis of the Railway Clearing House, which could distribute its cost proportionately among all those of its members who desired to use its facilities, not only the four great systems, but the still ungrouped lines, and with the addition, perhaps, of the Underground group. Its organisation might well follow, with necessary modifications, the lines of the Ministry Intelligence Service, the details of which are still available, and I am of opinion that, if agreement could be reached on the matter, the co-operation of the Ministry should be secured, since a Government Department is often in an exceptional position for procuring information not accessible to a private organisation, and it is part of its legitimate function to collect and disseminate information and otherwise assist the legitimate interests of the industry or activity with which it deals. The exercise of this function would, however, be greatly assisted, if by then the International Communications Office of the League of Nations is in a position to act as the clearing house for transport intelligence from the various countries composing its membership.

*See W. E. Simnett, *Railway Amalgamation in Great Britain*. The author acted as Secretary of the Railways Amalgamation Tribunal.

The railway press of this country could also be of the greatest assistance in such a scheme, having already an organisation directed largely to the same end. The Institute of Transport, apart from its professional functions, confines itself to the reading and discussion of papers, and does not publish abstracts or maintain an information service.

In the United States, there is both an official and an unofficial organisation concerned with the collection and distribution of railway news, statistics, and other data, and rendering valuable and indispensable service to the railroads. In this country, there is nothing of the kind. Instead, we have keen officers here and there, striving to satisfy their individual needs : they necessarily miss very much, and what little they glean is probably obtained with much duplication and overlapping of effort. On the score of economy, as well as efficiency, a central intelligence service is urgently necessary.

There is little space left in which to deal with railway publicity, but it is certainly not less important than the question of Intelligence. Since the four great systems were inaugurated, there has been a noticeable improvement in the ordinary forms of railway publicity, especially upon the artistic side, and as is well known, the London Underground group have long held an excellent record in this respect. But apart from the advertising of services and resorts by each company, there is much to be done in educating both the travelling public and the trading community in regard to general railway matters : what the railways are doing day by day, the conditions under which they work, their difficulties, their less-known facilities and services, the directions in which both traders and public can co-operate with them to the common advantage, and so on ; work which can only be efficiently and consistently performed by a central publicity service.

It has been said with truth that the habit of and desire to travel has grown largely of late, and is still growing among all classes of the community ; and it is doubtful whether the British railways are doing all in their power, or using every means, of cultivating this habit. In organised and persistent publicity, directed both to the trading and commercial community and to the ordinary traveller, lies the means of greatly extending their traffic and improving their position.

* * *

Major W. E. SIMNETT : (In introducing his paper) : I propose that my paper be taken as read, since copies are in your hands, but there is one qualification I wish to make. I have said that there is in this country no organised provision, apart from the technical press, for transport intelligence ; but I have recently heard of a bureau which has begun to function in the London School of Economics, and about which no doubt Mr. Headicar will tell you. I have seen what is being done there, and although it is excellent as far as it goes, and is at least a sign that the good seed sown by past efforts is beginning to bear fruit, yet it by no means corresponds to the proposals in my paper.

Mr. B. M. HEADICAR (London School of Economics and Political Science) : Major Simnett has told you that a Railway Information Bureau has been established in the London School of Economics. It has only been established about eighteen months, and is on a comparatively small scale,

but it is growing very rapidly, and has done some important work. I can say this because I am not responsible for the work that goes on in the Railway Information Bureau beyond providing the sources of information; these include the Acworth Library of Transport, which I believe is the largest transport library in the kingdom.

The Railway Bureau publishes every month a bulletin of information on the Foreign Railways and everything connected with them and is financed by the four big Railway Companies in the United Kingdom. During the last year it has investigated and compared steam and electric traction in Switzerland, Germany, Austria, France, Spain and other countries, and has made a study of the comparative level of freight rates in foreign countries coupled with considerations of the degree of service offered. It has collected a mass of valuable information relating to the interpretation of the 8-hour day in foreign countries, and has made a study of the growth of road transport services and their effect on railway operation abroad. Information is mainly obtained from official sources abroad, and we have recognised, definite arrangements for exchange of information. The fact that the last of the big four Railway Companies found it worth while to come into the scheme during the last two or three months is evidence that the results produced by the Bureau have been worth procuring and paying for. The Railway Bureau is not only for the service of the Railway Companies; it is open to answer questions relating to the technique of railways at any time.

Dr. E. A. BAKER (London University School of Librarianship): referred to the work of the School of Librarianship at London University, recommending the employment of library assistants who had received preliminary training there, or its equivalent.

Mr. L. S. JAST (Library Association): advocated the use of the Dewey System for cataloguing and cited his experience as to the value to engineers of an up-to-date file of clippings.

Mr. R. BAXENDALE (L.M.S. Rly, Euston): With regard to Major Simnett's remarks about the railways, I should like to remind him that there is a Railway Company which has a library close to Storey's Gate, presided over by Miss Russell, which is very well equipped on matters of training in its own particular sphere, and does very good work for their staff.

Mr. E. WYNDHAM HULME (Library Association): referred to "The Subject Index to Periodicals" and explained that he had sent in to the Committee of the Board of Education on Public Libraries a memorandum on "The Subject Index" with an appeal for further assistance in bringing the Index up-to-date. He added that the unpublished material at Aberystwyth is available to users of the Subject Index if they write for it.

INFORMATION ON THE WORK AND AIMS OF THE LIBRARY CO-OPERATION COMMITTEE AND ITS ENQUIRY OFFICE.

By PROFESSOR F. E. SANDBACH, M.A., Ph.D. (Association of University Teachers ; Chairman of Joint Standing Committee on Library Co-operation).

I have been invited to make a short statement about the work and aims of the Library Co-operation Committee (or, to be more precise, Committees ; since, in fact, two Committees exist side by side), and the Enquiry Office, which owe their origin to the Association of University Teachers. I do so with great pleasure, because I hope both to be of some service to yourselves and to advance the cause of co-operation between libraries.

I need not trouble you with a full account of how these two Committees came into existence, but ought, perhaps, to explain their relation to each other. The older of the two is the Library Co-operation Committee of the Association of University Teachers, which was appointed about two years ago, for the purpose of facilitating research work. One of the primary duties, and, as a rule, one of the strongest desires of the University teacher is, of course, to add to the sum of human knowledge. But very many University teachers, especially in the provincial Universities and University Colleges, have been seriously hampered by the inadequacy of the library resources at their command. They have been in the position of inventors cut off from supplies of necessary material. Yet the very material they required was often available, and lying idle at some other centre which they could not conveniently visit.

It was decided, therefore, to enquire into the possibility of getting first the libraries of University institutions, and later on, other libraries possessing material likely to be needed by University investigators, to agree to loan to each other publications and manuscripts required by individuals engaged in serious work. Certain categories of books, *e.g.*, standard works of reference and current manuals and text-books, were to be excluded from the proposed loaning agreement, and certain restrictions and safeguards were suggested in order to secure smooth working and to make the proposal as generally acceptable as possible.

The replies to the enquiries made were overwhelmingly favourable, and last January the Library Co-operation Committee of the Association of University Teachers called a Conference of representatives of University Institutions for the purpose of taking definite action. At this Conference, the second Committee was elected, the Joint Standing Committee on Library Co-operation, consisting equally of representatives of the Association of University Teachers and of members drawn from the representatives sent to the Conference by the various University Institutions. Of the 10 members elected to serve on this Committee, 5 were University Teachers and the other 5 University Librarians. Since that time the Committee has been strengthened by the co-option of 3 more Librarians (one from a Scottish Uni-

versity Library, the others from important London University Institutions).

It is this Joint Standing Committee, which was given restricted executive powers, that has carried on the work initiated by the other Committee. It is gradually extending the scope of inter-library loaning by agreement or in practice, and it has set up an Enquiry Office, the expenses of which have been borne so far by the Association of University Teachers, but which is about to receive generous support from the Carnegie United Kingdom Trust.

This Enquiry Office is a necessary supplement to the establishment of a practice of mutual loaning. The investigator needs not only to *be able* to get books borrowed for him, but to *know where* those books can be obtained. That is the information which the Enquiry Office supplies, so far as it can. It reports to the enquirer (1) where any desired publication is available (if it can be found); (2) whether the library possessing it is prepared to lend it to the library at which the enquirer works. It does not actually arrange the loan. That is left to the enquirer, who asks his librarian to apply for it.

As the Enquiry Office has only been in existence for a few months, it is not yet widely known, and it has still much to learn by experience. Nearly all the enquiries it has received up to the present have come from University teachers; but it will be glad to deal with enquiries from any serious investigators. Of the 44 publications so far enquired for, 35 have been located in one or more libraries, and of these, 34 could be reported as loanable from one library to another, in some instances from libraries on the Continent. We still hope to find most of the 11 not yet accounted for, several of which represent quite recent enquiries.

In addition to dealing with enquiries, the Joint Standing Committee has in view an attempt to compile—in the first instance for its own purposes—a list of “non-scientific” (i.e., literary, historical, philosophical, etc.) periodicals which may eventually form a useful nucleus for a Supplement to the World List of Scientific Periodicals recently issued.

I think I need only add the address of the Enquiry Office, in case members of this Conference or their friends may wish to make use of it. Enquiries should be sent to Mr. L. T. Oldaker, The University, Birmingham; and in order to simplify the work of the Enquiry Office, enquirers are requested to state which libraries they have already tried in vain for the publication they require, as well as the library at which they wish to use it. No fee is charged for the Enquiry Office’s services.

* * *

Professor F. E. SANDBACH: (In introducing his paper): May I make an appeal to those connected with special libraries to consider whether it would not be possible for your libraries to enter into this movement, whether formally or informally? We should be very glad to hear from any special libraries that they would be willing on occasion to loan books to other libraries. That would be of the greatest value to us at the present time, and I think probably the special libraries themselves would find that they benefited from it ultimately, because the workers in those special libraries must undoubtedly at times wish to use publications which are not available there.

THE RELATION OF THE BODLEIAN TO THE SPECIAL LIBRARIES.

By A. E. COWLEY, M.A., D.Litt. (Bodley's Librarian).

I am glad to take the opportunity of assuring you of our interest in your aims, and of shewing that in a small way we try to do the things that you are doing.

In former times it was possible for a man to know all there was to be known. It was difficult, but it could be done. Roger Bacon could invent gunpowder and write on Greek and Hebrew grammar—or if he did not, he might have done so. And much nearer our own day there have been men who seemed to command all the resources of human knowledge. Well, that is no longer possible. To-day, if a man is to do any good, he must specialise. It is true that subjects cannot be sharply separated or kept in water-tight compartments, and the more a man can know of matters bordering on his special study, the better for himself, his friends and his special study—but roughly speaking, the principle is sound. And the library is the instrument he uses. The great institution which I try to direct was founded to contain the literature of all knowledge of all times, and I hope it may always be kept up to that high ideal. It is clearly desirable that every book that ever was published should be accessible somewhere in case of need. A particular book may not be wanted more than once in a year—perhaps once in 20 years—but when wanted it ought to be available in one or more of the great libraries of deposit. It is equally clear that amid such a mass of material as we have for instance at the Bodleian, the average man is helpless, and the question is how we can best help him.

"We live in very modern times," as a lady once remarked to me, and we must provide for modern needs; we must specialise.

We began to do this some years ago by providing shelves of "select" books, not reference books in the librarian's sense of the word, but the books most often needed by persons studying a particular subject at the University. Thus we had "Select History," "Select Law," "Select Theology" (a very thorny subject to select) and many other small select libraries, to which the reader could go, see what there was and help himself. This system was found to be very useful, but it was felt that it might with advantage be extended.

There were already several specialised libraries connected with the University; that of the Tylorian Institution for Modern Languages; that of the Indian Institution for Indian and Oriental subjects; the Radcliffe Library for Natural Science; and smaller libraries attached to the schools of Geography, Forestry, Botany, etc. The great need is for co-ordination. In a memorandum circulated in 1922 I drew attention to this need and pointed out that it could be best met by a system of departmental libraries under the central control of the Bodleian. The first result of my memorandum was the establishment of a departmental library of English Law in a room in the Examination Schools, as a branch of the

Bodleian. It has succeeded beyond all expectations, and now I want to enlarge it by taking in another small library of a similar kind.

Without being indiscreet I may at least say that I hope before long to have as a branch of the Bodleian a departmental library of Natural Science (which probably will again have to be specialised into the different branches of science), another of American and Colonial subjects, and that I look forward to a great extension of the system. The difficulty of course is to find space, and it all takes time.

If you will believe that we are really trying to be, not merely monumental, but practical and useful, you will perhaps allow me to make one small suggestion to the Conference. We have recently produced with great labour a small catalogue of Foreign and Colonial Periodicals taken by the Bodleian, by University Institutions and by Colleges—a “Gesamt Katalog.” This has proved to be a very welcome help. Something on a much more extensive scale is wanted for English Periodicals. One of our problems in the Bodleian is the immense quantity of trade journals we receive. It is very important that complete files of these should be preserved, especially in centres where they will be most useful. When your Association issues its guide to the specialised libraries of this country, I suggest that it might pay special attention to these journals and endeavour to ensure that complete files of them are preserved in suitable centres.

The other side of your activity is supplying information. Strictly speaking, this is no part of the duty of our staff, but we do it and it takes a good deal of our time; I remember as a child being told that all information could be obtained from the British Museum, and I pictured it as a mysterious place full of wonderful men bulging with knowledge, who sat like images of Buddha day and night giving forth answers to conundrums—and supposed that they liked doing it. I think we suffer from a confusion with the British Museum. As a matter of fact, between you and me, we don't know everything. Yet we get the most varied enquiries from every nation and kingdom—from Jews and Elamites and the dwellers in far California. The commonest are requests to value books (it belonged to my grandmother, who valued it very much: the first few leaves are gone: it weighs 4 lbs. 3 oz.). These we refuse to deal with. Then there are almost daily enquiries from Americans about the history of their families (Mr. X: we know that an X came over with the Conqueror and there was an X in the “Mayflower”: it is just the little bit in between we want you to trace). With these I have no sympathy, but we do what we can. Another question: Is the acacia in my garden the first one planted in England? One kind-hearted man on being assured there was nothing to pay, wrote: “Perhaps you will not be too proud to drink my health in a glass of wine,” and enclosed a postal order for a shilling. Another asked us to decide a golfing bet. These are, of course, trivialities, and we do not spend much time on them, though they are numerous. Others are serious, dealing with bibliography, manuscripts, history and all branches of scholarship.

In answering them, we gladly take infinite pains and spend a great deal of time which we can often ill afford—and it is from scholars that we receive the most grateful acknowledgments.

Another kind of information has an educational value; that domed building adjoining the Bodleian, known as the Camera, is largely used by the young members of the University reading for examinations, and the patient help given to them by the Superintendent and Assistants is beyond all praise. They alone know, after years of unwearying devotion, that when a young man asks for Mozley's Library of Biology, he really wants the Dictionary of National Biography, that when he expresses a wish to read Hieratica, he means the Hellenica, and they alone can decide that a "book on Sulphurine" has nothing to do with chemistry, but is really a treatise on the Zollverein.

Let me add, that when I said we were doing in a small way what you are doing, that was not merely affected modesty. Our work is in a way preparatory to yours. This place is largely educational. We cannot send out the finished product, but we can try to teach the young how to work, to think, to weigh evidence. The Bodleian must not be a specialised library, but it can direct the special libraries and see that they are properly equipped. It must provide for them without fear, favour or prejudice, giving all the materials for knowledge, in the hope that truth will out and that real progress will be made.

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THE CHAIRMAN: Dr. Cowley has spoken of the services which a general library can render to specialists. I will now ask Mr. Jeffery, who has charge of a special library, to tell us what the needs of such a library are. I might say that Mr. Jeffery is not the librarian of a Government institution, though he comes very near being one, since the Imperial Institute is practically under Government supervision. I should like to take this opportunity to tell the Conference, which is attended by the librarians of several Government Departments, that those officials at least are ready to welcome any member of the public to their libraries and give them all the assistance they can.

THE WORK OF THE IMPERIAL INSTITUTE LIBRARY.

By H. J. JEFFERY, A.R.C.S., F.L.S.
(Librarian, The Imperial Institute.)

The library is so intimately connected with the other Departments of the Institute that it will be convenient, before giving an account of its work, to outline briefly the activities of the Institute as a whole. The principal function of the Institute is to promote the commercial and industrial utilisation of the raw materials of the Empire. This it does by the investigation in its laboratories of new or little-known products of all kinds, and of well-known raw materials from new sources; by supplying information relating to such materials; and by the maintenance of comprehensive exhibits illustrating the natural resources of all the countries of the Empire overseas.

The investigations are conducted primarily with a view to determining the possible uses in industry of the materials dealt with. As already indicated, the materials examined cover a very wide range, and in addition to the usual chemical laboratories, special laboratories have been established for the examination of timber, rubber, cement and ceramic materials, and complete technical trials of these materials can be carried out. Further, the Institute is in close touch with manufacturers and users of raw materials in this country, and is thus able to arrange large-scale trials of promising materials when necessary to supplement the laboratory trials.

Requests for information are received from Governments, firms and individuals overseas as well as from manufacturers, merchants and others in this country; while a number of visitors to the Institute call to make specific verbal enquiries or to discuss special questions. Many of the enquiries from overseas have reference to the marketing of produce, while merchants and others in this country desire information as to supplies of raw materials from Empire sources. Requests are also received for information regarding the details of industrial processes and particulars of the machinery involved therein; as to methods of tropical agriculture and the processes adopted in the preparation of commercial products for the market; current conditions obtaining in the market as regards specific products; and related subjects. Other enquiries relate to the prospects for agricultural and other industries in the different countries of the Empire, more particularly those in the tropics. Requests are also received for bibliographies on various subjects, but owing to the limited staff available, it is usually only possible in such cases to furnish a list of the chief references. Since, however, these requests do not as a rule relate to highly specialised technical or scientific matters, but come from planters and others who desire to obtain publications on the subjects in which they are interested, a shorter, more select list, probably meets their requirements better than an exhaustive bibliography. In addition to answering individual

enquiries, general information on the resources of the Empire is disseminated in the quarterly "Bulletin of the Imperial Institute," and in separate publications dealing with specific subjects. The "Bulletin" also serves as a medium for recording the results of the chief investigations conducted at the Institute.

In the Public Exhibition Galleries, between 30 and 40 separate collections are maintained, each country of the Empire being represented. The exhibits include all the principal economic products and typical examples of native industries of India, the Dominions and Colonies, so that under one roof a comprehensive permanent display of Imperial resources is available. The galleries fulfil an important public purpose in teaching the commercial geography of the Empire, and are much visited by parties from schools, for whose benefit two guide-lecturers are provided. Free lectures with explanation of the exhibits are also given to the general public at stated times. The collections are also used for reference purposes by commercial firms, and are naturally of value in connection with many enquiries and investigations conducted at the Institute. Technical officers are available to explain the exhibits to visitors and to supply information to enquirers on overseas countries and products.

To come to the work of the library itself. The funds available for the purchase of books and periodicals has always been very limited, but we are fortunate in receiving gratis publications issued by the home and colonial governments, whilst a large number of periodicals are received in exchange for the "Bulletin of the Imperial Institute." Books sent for review in the "Bulletin" are also placed in the library. In the early days of the Institute, when it had a strong social side, books and periodicals of a general nature were included, but these have been largely disposed of to make room for those of a more technical kind, and we can now claim to be a Special Library in the sense defined by certain members at the Conference last year, viz., a collection of books on a special subject, in this case on the raw materials of the Empire, run by a specially trained staff.

The library contains some 40,000 volumes, exclusive of periodicals, of which over 500 are regularly received. Although we are concerned mainly with the Empire, foreign works are well represented, and include the chief technical periodicals of the United States, European countries and their colonies. We are naturally very strong in the publications of Colonial Governments, and in most cases possess complete sets of their agricultural and mining journals, bulletins, etc., as well as long runs of the annual reports of the technical departments, trade returns and other publications relating to raw materials. The books in the main are arranged on a geographical basis, with a special section for technical works of a general nature.

The library is open to the general public, but its chief work is concerned with supplying information required by the scientific and technical staff in dealing with the investigations and enquiries already outlined. This frequently involves considerable literary

research, not only on the chemical side, but as regards methods of manufacture and utilisation, market prices and conditions, statistics of production, and so on. To meet these manifold requirements is obviously impossible within the walls of a single library, and the resources of the neighbouring Science Library and of the Patent Office Library are at times drawn on. The excellent facilities afforded at both these libraries is much appreciated by the staff.

The indexing of periodicals and other publications was commenced in connection with the laboratory work, about 25 years ago, and was done entirely by the laboratory staff for many years. Subsequently, the mineral index was run independently of the organic, the latter being transferred to the control of the library staff. Owing to the recent amalgamation of the Imperial Mineral Resources Bureau with the Institute, a somewhat different system of indexing mineral subjects has been introduced, and I propose, therefore, to confine my remarks to the organic index, with which I have been more closely connected.

The general arrangement of the index is the same as when it was first started, with the necessary changes in detail consequent on its gradual extension. It is essentially a subject index, and is divided primarily into the chief groups of products, such as drugs, dyestuffs, essential oils, fibres, fodders, foodstuffs, gums, oils and oil seeds, resins, rubber, tanning materials, timbers, tobacco, and so on. It is not possible to give here the detailed system of classification, but generally speaking each group has such headings as analysis, bye-products, composition, countries, diseases, pests, preparation, statistics, substitutes, uses, etc., under which are included general references, that is, those not relating to any one product. Following these general headings, the individual products of the group are arranged alphabetically, each being divided into headings similar to those of the main group. In this way, products having a similar use are brought together. Since, however, a product may have several uses, it has been necessary to compile a key index which indicates the various groups under which each product is placed. This key index is arranged throughout alphabetically, and not only serves for the purpose of cross reference, but it also contains all synonyms, including scientific, native and common names.

Owing to lack of storage space, a fair number of periodicals are cut, the cuttings being pasted on separate foolscap sheets, which are arranged in numbered folders, classified on the lines of the main index. This system has been found preferable to the use of cuttings books, since all cuttings on one subject are brought together. The items, however, are all entered up in their appropriate place in the general index, so that the latter is complete in itself.

With regard to the actual process of indexing, all chemical journals and technical journals devoted to special subjects are distributed to the laboratory staff, who indicate the items to be indexed. An index slip for each item is written by the indexing

assistant, giving the necessary particulars as to the group section, sub-section, and so on, the reference then being typed on cards. The advantages of distributing such journals amongst the scientific staff are twofold. Firstly there is less likelihood of important matters being omitted from the index, and secondly the staff are enabled to keep in close touch with current literature on the subjects concerned with their laboratory work. We feel it is a better plan, and certainly much easier, to send the journals to the assistant rather than leave it to him to consult them in the library, which in our case is separated by a long stairway from the laboratories. The more general publications, including agricultural and forestry journals, departmental reports, etc., are read through in the indexing department.

The indexing is always as detailed as possible, and only occasionally is it found sufficient to give merely the title of the paper. In some cases, an article on the subject may require a dozen or more entries. For example, a general article on the ground-nut industry of French West Africa, dealing with local methods of cultivation and harvesting, manuring, varieties, pests, diseases, trade statistics, uses, etc., would be indexed under each of these sub-headings, under "ground-nuts" in the oil-seed section, as well as under the country; whilst if the nature of the information warranted it, each pest and disease would be separately indexed; further references may also be required in the foodstuffs and fodder sections. This detailed indexing naturally involves a large amount of work, and as we index regularly some 300 journals, in addition to Bulletins, Departmental Reports, etc., and have only one indexing assistant and one typist, it has been found necessary to cut down the particulars given on the cards to a minimum and to get as many entries as possible on each card.

Here I should like to say a few words as to the qualifications required by an indexer. In connection with the organic products index, we have at different times tried a fair number, of very diverse training, but the only really satisfactory indexing has been done by those with a good scientific training. The present indexer on the organic products side, had a sound College training in science and subsequently spent some years in a works laboratory, a combination which has proved excellent for the highly-specialised indexing required. It has been found much easier to teach indexing to a person with a knowledge of scientific nomenclature and methods, than to get a trained indexer to understand the requirements of a scientific institution.

The indexing department does not prepare bibliographies or abstracts for the use of the staff. The scientific or technical assistant dealing with an investigation or enquiry consults the index himself, and selects his own list of references, this procedure being considered of value to the junior in developing the faculty of literary research. The publications containing the references so collected by the assistant are, of course, obtained for him by the library staff, but he has free access to the shelves for the purpose of prosecuting his search.

Dr. R. S. HUTTON (British Non-Ferrous Metals Research Association) : I should like to say one word on behalf of the Committee to supplement the remarks you made yourself in thanking Dr. Cowley for his presence. I might perhaps confess that your Committee had some little trouble in its mind in settling on a place of this year's Conference. Quite early on it had a keen desire to choose Oxford as its place of meeting ; we felt that it would be almost an impertinence to come to Oxford, representing, as we did, such an extraordinary collection of different bodies, if we could not secure some contact with the great Bodleian Library, which we all knew—even the most ignorant of us—to be the real jewel of the city. The very kindly act of Dr. Cowley in consenting to come amongst us in this way was very much appreciated by the Committee and has been, I am sure, a great pleasure to us all.

In connection with Professor Sandbach's paper, I merely wish to mention to the Conference a fact which by now most members have already discovered, that we have amongst us on this occasion a foreign visitor, Dr. Jürgens, of the State Library of Berlin and of the *Notgemeinschaft der Deutschen Wissenschaft*. I mention that in this connection, because I understand from Dr. Jürgens that he is not desirous of addressing us from the platform, but in private conversation with him I and many others have discovered that he is engaged on work which is of intense interest to many of those present. In Germany they have a very highly developed system of interchange of books, periodicals, and other matter of that kind. That seemed to me to fit in very closely with the excellent movement initiated by Professor Sandbach and his Committee, and I hope that any of our visitors or delegates who wish for further information upon that will put themselves in contact with Dr. Jürgens.

I am sure the Committee will carefully note the suggestion made by Mr. Jeffery ; we hope, however, that Mr. Jeffery will himself help by putting forward any suggestion for supplementary entries on that questionnaire.

THE CHAIRMAN : I am sure the librarians of public departments will be glad to give you every assistance you want.

Miss K. SECKER (Imperial Bureau of Mycology) : I should like to ask whether the Enquiry Office at Birmingham University supplies information on the whereabouts of foreign periodicals, or only of books ?

Professor F. E. SANDBACH : There is no limit to what we are willing to endeavour to find. As a matter of fact about two-thirds of the enquiries that have come in so far have been for periodicals, mostly foreign. It may interest you to know that the enquiries have ranged over all sorts of subjects, including science and art, from metallurgy and mining engineering on the left to classics on the right.

Mr. J. MENKEN (Business Research Association) : The Business Research Association which I have the honour to represent here is composed of persons who are engaged very largely in research, and one of the great difficulties they have met is that of obtaining access to convenient sources of information. Particularly do they find a difficulty, in spite of the excellent work which is rendered by the institutions at Clare Market, in obtaining access to files of trade papers—which are very, very numerous indeed. It is therefore with great interest that one learns that the Bodleian Library is considering making accessible its large collection of trade papers. I am sure that all persons who have to engage in any business research will find that that collection, if and when it is made accessible, will be indeed invaluable.

Mr. H. ROTTENBURG, M.A. (Engineering Laboratory, Cambridge University) : I should like to ask one question in regard to the Bodleian Library scheme of starting departmental libraries : Are these libraries that would otherwise be in the Bodleian, or are they a duplication of what is in the Bodleian ? I ask, because it is a point that probably will arise with a great many libraries in course of time. At Cambridge, for instance, the building is not large enough to contain the whole general library ; one section put forward the plea that the general library should be split up into departmental libraries controlled by the central organisation ; those people, however, who believe in one glorious building housing the lot maintain that if people went to the departmental libraries they would often find that the book they wanted was in the central portion. I would like to ask Dr. Cowley whether he finds if the books are not duplicated, that any considerable proportion of enquiries tends to fall between two stools ? It would supply useful statistics for the

future guidance of other libraries if it was known how often such an event occurred. It is a small matter, but it is made a great deal of by those who oppose the departmentalisation of a large library such as a university library.

Dr. COWLEY : I am very glad you have asked the question, sir. As a matter of fact, in the instance I gave of our first real departmental library, such as I wished it to be, all the books were transferred from the central library to the law library. It is not a duplicate collection at all. I will not say that there are not some duplicates, because there are books which are required by students of law which are also required, for instance, by students of history. So that we found it advisable to have copies of those in both departments ; but as a rule the books will not be duplicated. On the other hand, of course, we have an advantage and a disadvantage here in being a comparatively small town, and whereas it is desirable to have the departmental libraries housed elsewhere than in the Bodleian building proper, the distance is never very great, and as we are connected by telephone it is always possible to get a book from one to the other in a very few minutes. It is rather different from the position in London, for instance ; but I do not think the difficulty is really a serious one. I think you will find that *solvitur ambulando*.

Mr. E. WYNDHAM HULME : Is the catalogue of periodicals an entirely new piece of work, or is Dr. Cowley referring to the Union List prepared by the late F. J. Haverfield ?

Dr. COWLEY : The catalogue of periodicals is an entirely new effort of our own, and we are proud of it, to tell the truth. It was published this year. It is quite a small thing in actual size, but it took a great deal of doing, because we had to get these lists from rather refractory bodies before we could put them together. It is an entirely new compilation, and I hope it will be found useful.

(A vote of thanks to Dr. Cowley was carried with acclamation.)

THE CO-ORDINATION OF MEDICAL INFORMATION.

By MISS A. L. LAWRENCE, M.B.E., M.A., LL.B.
(British Medical Association).

The problem of the co-ordination of medical information neither begins nor ends with the product of the laboratory or research institute. It is not confined to the relatively simple question of keeping under review the results obtained progressively by research in the allied sciences upon which medicine must draw to an increasing extent. For medical information in its fullest sense includes the experience of every worker in any branch of medical practice. For example, vital statistics, including the statistics of every form of disease, are ultimately traceable to the routine experience of general practitioners; they are comprehensive just in so far as the individual general practitioner has been induced to record those experiences, reliable only in so far as he does so faithfully; and their utility is limited by the form of the record in which the basic experience is embodied. It follows that the increasing specialisation of medical practice with its inevitable danger of sectionalisation and isolation is a real danger and a considerable obstacle in the way of co-ordination of information, a danger and an obstacle to be met at the very outset. The problem is to secure, first, the closest personal contact and co-operation between the different sections of the profession; second, the fullest possible record of the experience of each, and, finally, the co-ordination of the actual records of that experience in a form which will ensure their maximum utility; and this work of co-ordination is in itself a not unimportant branch of medical research, necessitating the collaboration of picked investigators. For a concrete illustration of the general proposition reference may be made to the work of the Ministry of Health in the course of its Cancer investigation.

We are fortunate in this country in possessing machinery admirable calculated to perform among other functions this one of co-ordination. It is supplied by the Ministry of Health and the Medical Research Council, on the one hand, and the British Medical Association on the other, and it is supplemented by the Health Organisation of the League of Nations. The functions of these bodies and their record of achievement may be studied at large in reports readily available to the general public. It is the object of this paper to deal in some detail with the development of general medical bibliography and medical library services as one agent in the co-ordination and distribution of medical information.

For the English speaking world at least, American medical bibliography holds the field. For practical purposes its development begins with the work of John Shaw Billings at the Library of the Surgeon-General at Washington. Billings, an Army Surgeon during the Civil War, came to the Surgeon-General's office in 1864 and there found himself in charge of a medical library of some 2200 odd volumes, accumulated incidentally for departmental use. Besides devoting himself to the expansion of this library he conceived the idea of a comprehensive Index Catalogue, and secured

the approval of Congress for his scheme. The first volume of the Index Catalogue, which is a combined index of authors and subjects arranged on the dictionary plan under a single alphabet, was published in 1880, the series being completed with the issue of the "Z" volume in 1895. The principle of selection underlying the subject classification in this work is stated to be the employment of "those titles under which it is presumed that the majority of English-speaking physicians would look."

The first series contains 176,364 author titles, 168,557 book titles, the titles of 511,112 original articles in scientific periodicals, and 4,335 portraits. The Index Catalogue has now reached the fourth volume of the third series, and an indication of its scope is given by the fact that the original articles indexed are drawn from some 4000 periodicals, on a very rough estimate. It is, according to Garrison, directly due to Billings' work that America has to-day 167 medical libraries as against the total of 118 medical libraries in Europe. In 1921 the Surgeon-General's library was the second largest medical library in the world, containing 238,799 volumes and 366,925 pamphlets, as against 240,000 volumes and 800,000 pamphlets in the Library of the Paris Medical Faculty. A card catalogue of all titles of books and pamphlets added since 1916 is now available in the Library for public use. These cards are printed by the Library of Congress and arranged according to its subject classification and duplicates may be obtained from the Congress Library for a small sum.

The Index Catalogue is not a complete medical bibliography, but merely a catalogue of the Surgeon-General's Library. Billings supplemented it by a scheme for an international bibliography of current medical literature, which took shape in the Index Medicus. The first issue appeared a year before the first volume of the Index Catalogue. In form it was a monthly bibliography of current medical literature containing, according to the prospectus, "the titles of all new publications in medicine and surgery and collateral branches received during the preceeding month, classified under subject headings, and followed by the titles of valuable original articles upon the same subject in medical periodicals." The nomenclature and classification adopted were those of the Royal College of Physicians of England, based upon Dr. Farr's system. This meant that entries were arranged under headings and sub-headings according to a scheme which presented a logical classification of the biological and medical sciences according to the ideas then current. The utility of the Index was never in doubt, but such a scheme could not be run at a profit, and, after various vicissitudes, publication was suspended in 1899.

In 1900 the Index was replaced by the French *Bibliographia Medica*, published by the Paris Institut de Bibliographie, under the direction of C. Potain and C. Richet. The plan of this work corresponds roughly to that of the Index Medicus, but it is arranged arranged according to the decimal classification, and the alphabetical subject index, which is a feature of the Index Medicus, is omitted. The enquirer must, therefore, memorise his classification and apply

it in his search for a given item. This work served to bridge the gap between the first and second series of the *Index Medicus*. The second series of the *Index* began in 1903 when it was taken over by the Carnegie Institute of Washington with Robert Fletcher, an Englishman who had worked with Billings on both the *Index Catalogue* and the *Index Medicus*, as Editor-in-Chief. The original classification and the subject headings reappear in this second series.

With the commencement of the third series in 1921 the form was modified. The *Index* is now a quarterly publication and the original scheme of classification has been abandoned in favour of an alphabetical arrangement of subjects, individual entries being grouped under the name of the author under each subject heading. The general scheme is similar to that described below in connection with the *Quarterly Cumulative Index*. The annual subscription to the *Index* is two guineas.

A less comprehensive, but within its scope a no less admirable work is the *Quarterly Cumulative Index* edited for the American Medical Association by the staff of its library. This appears quarterly in April, July, October and January. Each number indexes the literature of the whole year up to the end of the month prior to its issue, thus superseding its predecessor. The January number indexes the medical literature of the whole of the preceding year. Each number contains the following items :

- (1) A list of books published during the year arranged under authors, with a full entry of the place and date of publication and price. This is a selected list ; new editions and books ephemeral in character are not listed.
- (2) A classified list in which the titles contained in the author list are arranged under 37 subject headings. The full bibliographical data are not repeated.
- (3) A list of publishers.
- (4) A list of American Government Documents, classed according to the department of issue and subject matter, with an indication of their cost and the source from which they may be obtained.
- (5) An index to original articles in what are described as the " better and more accessible medical journals." The connotation of this term is not left in doubt for the index is preceded by a list of 275 journals, giving the full title of each, the address of its publisher, the frequency of publication, and the price. For these journals the index is comprehensive. Entries are arranged on a true dictionary plan, one alphabet covering both authors and subjects. Each entry includes, in the order named, the abbreviated title of the journal as given in the preliminary list of journals, the number of the volume in which the article appears, its page numbers and the month (in other than monthly publications, the day of the month) and year of publication.

Illustrations and charts are also indicated in the case of subject entries, but not under authors. References to abstracts are not in general included, but when an abstract of a foreign article has appeared in the *Journal of the American Medical Association* the subject entry includes a reference to that abstract. Titles of foreign articles are translated.

The general scheme of classification under subjects is as simple as the material will allow. The issue for January, 1925, contains on a very rough estimate about 63,000 entries. Within its scope it would be difficult to find a more complete, convenient or inexpensive key to medical literature. The subscription in this country is now 30/-.

Bibliographies are obviously of little use to a worker ignorant of the location in his own country of the publications referred to, and this is especially the case in connection with the scientific periodicals amongst which so much of the most recent information must be sought. The need of the research worker in this respect has been met by Professor Leiper on a *Review of the Distribution of Periodicals of Medical and the Allied Sciences in British Libraries*, published in 1923 by the British Medical Association at 10/6, a price based on the actual cost of production. Incidentally, the book affords some indication of the distribution and character of medical libraries in this country. 4959 Periodicals are included in the list which is based on an examination of the contents of 37 libraries or groups of associated libraries, of which 21 are in or near London, and the remainder in Cambridge, Edinburgh, Glasgow, Liverpool, Manchester and Oxford. 25 of the libraries are medical or specifically scientific in scope, the remainder being University, public or general libraries which deal with scientific periodicals.

As regards facility of access to the periodicals in the various libraries examined, Professor Leiper points out that in general they are open only to members of the Institutes to which they belong and that proper introductions are necessary for others, but that the serious student may invariably rely upon the tradition of courtesy which obtains amongst the librarians. He also emphasises as apt to be overlooked, the fact that the National Library in the British Museum contains the most comprehensive and representative series of foreign medical and scientific periodicals in Britain.

His conclusion from the facts he has examined is that there is urgent necessity for a movement amongst the libraries to bring into effective working some practical scheme "to provide London with the many serials it lacks, and to eliminate the unnecessary multiplication of copies of little used periodicals of which it is surfeit." He envisages a plan whereby two copies of every periodical published should be available in London, one filed for reference, the other reserved for loan under suitable conditions. How far and how soon this plan will be realised remains in doubt. The demand for the organisation indicated may exist but it has yet to become effective. There are, however, three factors in the position which give some ground for hope. The first is the

perceptible increase in the demand for medical library services; this is evidenced by the current reports of the Royal Society of Medicine and the British Medical Association. The second is the existence in the British Medical Association itself of an organisation capable of a development in the direction of the supply of informational services limited only by the demands of its members, of whom roughly 16,000 are resident in this country.

Finally, in the Library of the National Research Institute at Hampstead, there is the nucleus of a public collection far more promising than that handled with such effect by Billings; for although it contains at present only some 7,000 volumes it has been planned from the outset to serve the needs of a research institute, which is designed to become the focus and inspiration of medical research throughout the Empire.

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Dr. O. KENTISH WRIGHT (Ministry of Health): Miss Lawrence has given us a most admirable and concise account of the principles which underlie the distribution of medical intelligence, and she has also given us a sketch of the bibliography and the indexes which are available for this purpose.

I think it may be of interest to this gathering to hear how the Medical Intelligence Section of the Ministry of Health endeavours to put these principles into practice with the help of the material which has been described. Miss Lawrence's allusions to the Ministry of Health as a Medical Intelligence Bureau were not, I take it, meant to refer to the Medical Intelligence Section of the Ministry; they were meant to refer to the work which the Ministry of Health does in the distribution of medical intelligence; I may say that the Medical Intelligence Section is, as it were, the kernel of that organisation. Its main function is to supply the various branches of the Department with the necessary medical intelligence. We also supply information to the medical officers of health, particularly of port sanitary districts, for which purpose we compile a weekly record of infectious diseases at ports at home and abroad. This is issued to all medical officers of health of port sanitary authorities in England and Wales for use in connection with the prevention of the importation of infectious diseases. The information contained therein is obtained from despatches and cablegrams which, by an arrangement with the Foreign Office, we receive from some 700 consuls and other British representatives abroad; during the course of the year we receive some 5,000 of these despatches. Also, the establishment of the Far Eastern Bureau at Singapore, under the League of Nations, has enabled us to keep our information on eastern ports much more up-to-date than we were able to do previously. Next, we compile a weekly index of articles published in medical journals from all over the world. For this purpose we take some 130 medical journals; these are gone through mainly by myself, since in order to pick out the plums in these journals it is absolutely necessary that somebody with medical knowledge should do the work. I have also started an index, not only of subjects which are of immediate interest to the Ministry, but of subjects which I consider are likely to become of interest. You may ask, why do I not use the indexes of which Miss Lawrence has been telling you? Well, those are very valuable for anything which is over three to six months old, but our abbreviated card index is used for recent articles.

Another of our activities is the watching of the daily press. We have a press-cutting service inside the Department; I find that perhaps about one per cent. of them are worth filing. The preparation of translations and abstracts in response to requests from the medical staff is another of our activities. We also issue memoranda to the office medical staff and also to some 30 odd medical officers who are stationed all over the country for work in connection with the Health Insurance Acts. These memoranda also go to medical officers in other Government Departments and to a few entirely outside Government Departments.

Finally, we have the specific requests for information ; I should like to read quite briefly some of the requests which we get, to give an indication of their varied scope : What is the best way to eradicate all forms of vermin—from rats and mice down to cockroaches, and cockchafers and gnats down to furniture mites, not to mention fauna of a more personal and intimate character ? What did children's breakfasts consist of among the working classes at the time of the industrial revolution ? Can we give instances of fashions which affect health ? What is the condition regarding the vaccination of the inhabitants of the Philippine Islands ?

Mr. EDWARD FULLER (" Save the Children " Fund) : Miss Lawrence referred to her paper to the necessity for co-ordinating vital statistics. I, for my sins, am the editor of a book which may be known to some of you in public libraries—" The International Year-Book of Child Care and Protection "—in which we attempt a world survey of the treatment accorded to children in the 350 countries and other political units which go to make up the world. Obviously, in a book of this character the question of vital statistics is of major importance ; we are constantly faced with a problem to which I would like to draw the attention of this organisation—and also possibly of Miss Lawrence's Association—that is, the lack of uniformity in compiling vital statistics. It is of great interest and great importance, for example, to compare the vital statistics of England and France, but we have great difficulty in doing this because of a divergence of practice in compiling statistics in these two countries. We in England have no official system of recording still-births. In France, even a child who does not survive birth for three days is counted as still-born and is registered accordingly.

There is also the question of the co-ordination of terms as between nation and nation. If this Conference is going to consider international questions, I should like to throw our the suggestion that a co-ordinated system of sociological data should be encouraged. The First General Congress of the Child held recently in Geneva, forwarded a resolution on these lines to the League of Nations ; I am sure that any similar resolution from a Conference such as this, or from the British Medical Association, would be of great value in drawing attention to this fundamental difficulty, which confronts all engaged in handling sociological statistics.

Miss LAWRENCE : In reply to the last point I should like to say two things. Firstly, that we in this country must set our own house in order before we can hope to make an effectual appeal for a universal system. It is a perfect scandal that still-births are not notified and registered, and the British Medical Association has talked on that point to deaf Government ears for a very long time. We are still doing it, and we are not going to stop.

Secondly, I understand that the Health organisation of the League of Nations has this matter of standardisation under close consideration with a view to action as soon as the whole field has been explored.

**FINAL - -
BUSINESS MEETING**

*Sunday evening,
September 27th, 1925.*

Chairman :

Mr. A. E. TWENTYMAN, B.A.

SUMMARY OF RESULTS OF CONFERENCE.

Dr. R. S. HUTTON : In the continued absence of our Chairman I am forced to act as a deputy spokesman for the Committee, and following on the precedent set last year at our Conference, we bring up for confirmation by the Conference certain resolutions, which the Committee have prepared to carry into effect, decisions arrived at in the course of our Sessions.

Resolution I. "That this Conference expresses its great appreciation of the hospitality of the Master and Fellows of Balliol College."

II. "That this Conference welcomes the distinguished representatives of library and information services of Belgium, Germany, Holland and the United States of America, and assures them of its desire for further friendly intercourse in the future."

III. "That this Conference of special libraries and information bureaux assembled at Balliol College, Oxford, sincerely appreciates the messages of good will sent to them by the Special Libraries Association of the United States, and is encouraged in its efforts to explore the special library field in this country by the inspiration afforded by the successful work of their American friends."

IV. "This Conference, having heard from Sir Horace Plunkett the aims and objects, the past work and present position of the Co-operative Library, welcomes the prospect of its transfer from Dublin to London, where it would be accessible to a much larger number of students and enquirers, and would be able to co-operate with other special libraries and institutions with similar educational functions."

These Resolutions were individually put to the Meeting by the Chairman and were carried with acclamation.

I must ask the indulgence of the Conference for the summing up of the results of the Conference. It is an impossible task, but was one that was attempted last year by Mr. J. G. Pearce, and hence, I suppose, found its entry into our programme. We have had this year a gathering of at least twice the size of last year's Conference.

I want to mention the following points so as to be quite certain that we have not misunderstood the wish of the Conference as to what the Standing Committee should carry out.

The Conference has formally re-appointed the Standing Committee, which with its officers is as follows :

Chairman : Mr. J. G. PEARCE, Director, British Cast Iron Research Association.
 Hon. Treasurer : Mr. SINCLAIR WOOD, Publicity Club of London, and Business Research Association of Great Britain.
 Hon. Secretary : Mr. A. F. RIDLEY, F.L.A., Librarian, British Non-Ferrous Metals Research Association.
 Mr. PERCY COHEN, Unionist Central Office.
 Mr. W. H. DAWSON, Universities Bureau of the British Empire.
 Mr. H. VINCENT GARRETT, Rowntree & Co. Ltd.
 Mr. LEON GASTER, Hon. Secretary, British Section, International Association of Journalists.
 Sir RICHARD GREGORY, Editor of "Nature," and Chairman, Circle of Scientific, Technical and Trade Journalists.
 Mr. L. HONEYBURN, Nobel Industries, Ltd.
 Dr. R. S. HUTTON, Director, British Non-Ferrous Metals Research Association.
 Col. E. L. JOHNSON, Director, Cleveland Technical Institution.
 Miss A. L. LAWRENCE, M.B.E., M.A., LL.B., British Medical Association.
 Brig.-General MAGNUS MOWAT, C.B.E., Institution of Mechanical Engineers.
 Mr. S. J. NIGHTINGALE, Research Dept., Metropolitan-Vickers Electrical Co. Ltd.
 Major W. E. SIMNETT, M.B.E., Assoc. Inst. C.E.
 Mr. G. B. WILLEY, Research Dept., Hadfields Ltd.
 Dr. J. C. WITHERS, British Cotton Industry Research Association.

This Committee has been instructed to continue and develop the work in hand, which for purposes of record may be tabulated as follows :

- (1) The Directory of Special Libraries.
- (2) The definition of the scope and title of the Association.
- (3) The preparation of proposals for a constitution, after further deliberation with the Library Association.
- (4) Collaboration with any outside bodies concerned with matters of direct or indirect interest to our work.
- (5) Consideration of various matters brought before the Conference, such as :
 - (A) List of recommended books.
 - (B) Inquiry into methods of examination and search in British and Foreign Patent Offices.
 - (C) The encouragement of the movement for joint abstracting services.
 - (D) The question of an international language and abstracts.
 - (E) Registration of new technical terms.
 - (F) The question of an inquiry form for library searchers.
 - (G) The co-ordination of sociological data.

THE CHAIRMAN : I think before we part we ought to pass a hearty vote of thanks to the Committee for its devoted labours, and to congratulate them on the success of this meeting.

(The vote of thanks was carried with acclamation).

Dr. R. S. HUTTON : On behalf of the Committee I thank you most sincerely for your expression of appreciation. We hope that we have not made too many serious mistakes.

M. P. OTLET : In the name of your foreign guests I tender you our best thanks for the reception you have given us. Our impressions can be summed up in one word. I have participated in many library assemblies, bibliographical assemblies, abstractors' assemblies and so forth, but I have never seen a group of people who, in three days, have done such splendid work with such enthusiasm. Engaged in many activities, you are yet like an orchestra in that you embody both unity and variety.

Receipts and Payments Account, for the period from 20th April, 1925,
to 31st December, 1925.

CR.

We approve of the Receipts and Payments Account certified by us on the 11th January, 1926, being published in the abridged form as above.

(Signed) WEST & DRAKE,
Chartered Accountants.